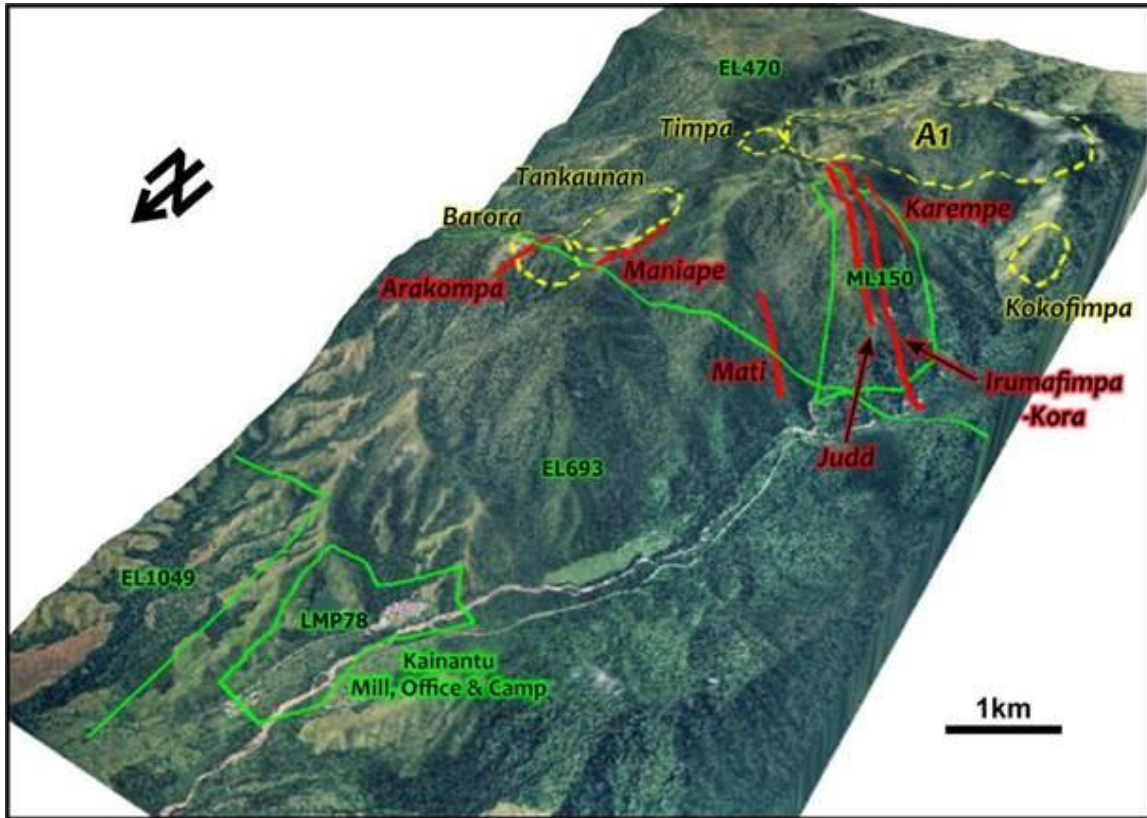


**INDEPENDENT TECHNICAL REPORT  
MINERAL RESOURCE ESTIMATE UPDATE AND PRELIMINARY  
ECONOMIC ASSESSMENT OF KORA NORTH AND KORA GOLD  
DEPOSITS,  
KAINANTU PROJECT, PAPUA NEW GUINEA**



Prepared by Nolidan Mineral Consultants, H&S Consultants,  
Australian Mine Design and Development

and Mincore  
for  
K92 Mining Inc.

Authors:

Anthony Woodward BSc (Hons.), M.Sc., MAIG  
Simon Tear BSc (Hons), EurGeol, PGeo IGI, EurGeol  
Christopher Desoe BE (Min)(Hons), FAusIMM, RPEQ, MMICA  
Lisa J Park BEng (Chem), GAICD, FAusIMM  
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## 1 SUMMARY

### 1.1 INTRODUCTION

This report is an independent technical report dated 7 January 2019 of the geology, exploration, mineral resource estimates, and mining scoping studies for the Kora North and Kora gold deposits at the Kainantu project. The Kainantu property covers a total area of 405 sq.km and is located in the Eastern Highlands Province of Papua New Guinea, approximately 180 km west-northwest of Lae.

In October 2018 K92 Mining Inc. (“K92”), requested Nolidan Mineral Consultants (“Nolidan”), H&S Consultants Pty Ltd (“H&SC”), Australian Mine Design and Development (“AMDAD”), and Mincore Pty Ltd (“Mincore”) to prepare a report in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) incorporating the results of recently completed mineral resource estimates and mine scoping studies of the Kora North and Kora gold deposits and plant upgrade studies.

H&SC were engaged by K92 to prepare a mineral resource estimate for the newly discovered Kora North deposit. Nolidan had previously prepared a mineral resource estimate for the Kora deposit which was reported in March 2017. AMDAD was engaged to undertake a Scoping Study for the development of the Kora North and Kora deposits. In conjunction with the Kora Scoping Study, Mincore was engaged to carry out a detailed study on the potential expansion of the existing processing plant to treat 400,000tpa of ore from the Kora North and Kora deposits.

As part of the Kora North and Kora studies AMDAD prepared conceptual cashflows, based on economic and processing assumptions provided by K92ML, to provide guidance in relation to the economic viability of those mine plans. Those cashflows are the basis of the Preliminary Economic Assessment presented in this Technical Report.

This assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessments will be realized.

The Project as described herein is 100% owned by K92 Mining Limited (“K92ML”) (formerly Barrick (Kainantu) Limited); a company incorporated in Papua New Guinea, which is 100% owned by K92 Holdings (PNG) Limited (“K92PNG”), a 100% owned subsidiary of K92 Holdings International Limited (“K92 Holdings”).

K92PNG acquired K92ML from Barrick (Niugini) Limited (“Barrick”) pursuant to an agreement dated June 11, 2014 (the “K92ML Purchase Agreement”) (which closed March 6, 2015), for the sum of US\$2,000,000. Under the terms of that agreement K92PNG is obligated to make additional payments of up to US\$60,000,000 as follows:

- (i) US\$20,000,000 upon K92PNG determining 1,000,000 ounces of gold equivalent (based on in-situ and mined product classified as measured mineral resource, indicated mineral resource, probable ore reserve or proven ore reserve); and
- (ii) US\$5,000,000 upon upon K92PNG determining each additional 250,000 ounces of gold equivalent (on the same bases as stated above) up to an aggregate of 3,000,000 ounces.

The obligation to pay additional payments will cease on March 6, 2025.

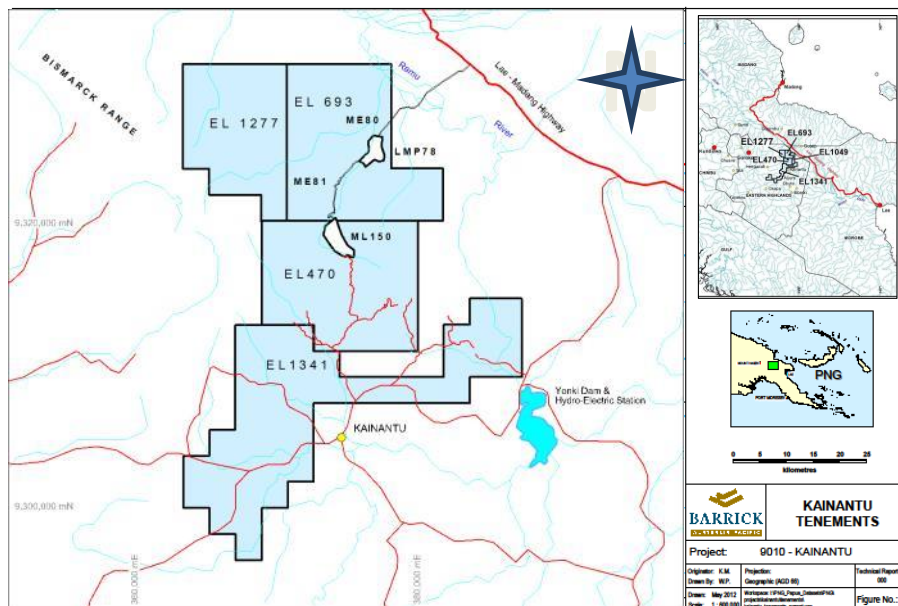
On August 21, 2014, Otterburn, K92 Holdings and the shareholders of K92 Holdings entered into a Share Exchange Agreement, pursuant to which Otterburn agreed to acquire all of the issued and outstanding shares of K92 Holdings, from the shareholders of K92 Holdings on the basis of one common share of Otterburn for each outstanding common share of K92 Holdings, for an aggregate of 49,126,666 Otterburn common shares. Subsequently the transaction was restructured, and Otterburn and Cada International Ltd. (a wholly owned subsidiary of Otterburn) entered into a merger

agreement with K92 Holdings on April 15, 2016, pursuant to which K92 Holdings agreed to merge with Cada International Ltd. to form an amalgamated subsidiary of Otterburn, and whereby Otterburn agreed to acquire all of the outstanding shares of K92 Holdings, in exchange for common shares of Otterburn on the basis of one post-consolidation common share of Otterburn for each common share of K92 Holdings, for an aggregate of 49,126,666 Otterburn common shares.

K92 Mining Inc. (formerly Otterburn) is a company incorporated under the laws of British Columbia, Canada; the common shares of which are publicly listed on the TSX Venture Exchange.

K92ML is the registered holder of the following tenements in PNG, as issued by the applicable government authorities in accordance with the PNG Mining Act 1992 (the "Mining Act"):

- Mining Lease 150 ("ML150"), effective until June 14, 2024;
- Mining Easements 80 and 81 ("ME80" and "ME81"), each effective until June 14, 2024;
- Licence for Mining Purposes 78 ("LMP 78"), effective until June 14, 2024;
- Exploration Licence 470 ("EL470"), effective until February 05, 2017;
- Exploration Licence 693 ("EL693"), effective until February 05, 2017;
- Exploration Licence 1341 ("EL1341"), effective until June 20, 2018. K92ML have lodged an application for renewal for a further two years; and
- Exploration Licence 1277 ("EL1277") which expired on May 20, 2009. The PNG Minister for Mining rejected K92ML's application for renewal on December 5, 2011. K92ML initiated legal action to compel the Minister for Mining to overturn the decision, but the court instructed the parties to instead try to reach an out-of-court settlement. Negotiations in that regard have to date been unsuccessful; and if not settled will revert to the courts for a decision.



**Kainantu Project Location.**  
Source: Barrick 2014

## 1.2 GEOLOGY AND MINERALIZATION,

The Kainantu property is located within the New Guinea Thrust Belt, close to its northern contact with the Finisterre Terrane. The property area is underlain by metamorphosed sedimentary rocks of the Early Miocene Bena Bena Formation, unconformably overlain by Miocene age sedimentary and intermediate volcanic rocks of the Omaura and Yaveufa Formations. These formations were intruded in the mid-Miocene by the Akuna Intrusive Complex, which comprised multiple phases of mafic to

felsic magma. Late Miocene age Elandora Porphyry dykes formed small high level crowded feldspar porphyry dykes and diatreme breccias.

Mineralization on the property includes gold, silver and copper occurring in epithermal Au telluride veins and Au Cu Ag sulphide veins of Intrusion Related Gold Copper (“IRGC”) affinity and also less explored porphyry Cu Au systems; and alluvial gold. The Irumafimpa-Kora vein deposit is the most advanced project at Kainantu with current defined resources and past modern mining activity in the Irumafimpa area. The deposit occurs in the centre of a large mineralized system approximately 5 km x 5 km in area that has been partly delineated by drilling and comprises several individual zones of IRGC and porphyry style mineralization. The current resources occupy a broad northwest trending mineralized zone more than 2.5 km long and up to 60m wide in which individual veins vary from less than one metre wide that pinch and swell over short distances (Au telluride lodes) to more continuous veins up to several metres wide (Au Cu Ag sulphide lodes).

The Kora veins average 3.1m true width; which is the entire extent of the known veins before cut-off grades are applied. Recent drilling from underground has delineated the Kora North deposit which currently comprises two parallel, steeply west dipping, N-S striking quartz-sulphide vein systems, K1 & K2. An additional structure, the Kora Link, has also been defined and provides a possible link between the two main vein systems.

Other less advanced prospects on the property include epithermal Au veins similar to Irumafimpa, IRGC veins similar to Kora, porphyry Cu Au systems, skarn Cu, Pb and Zn mineralization and alluvial gold.

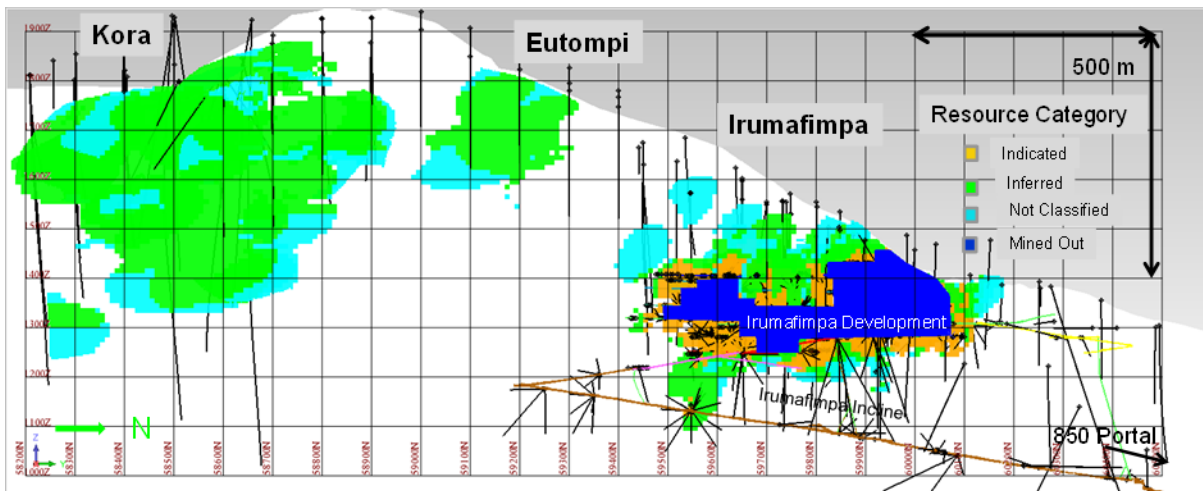
### 1.3 2017 IRUMAFIMPA AND KORA RESOURCE ESTIMATE

A resource estimate was completed in 2017 for the Irumafimpa-Kora vein systems based on the historical surface and underground drilling conducted by previous owners, Barrick and HPL. Face channel and grade control samples collected during previous mining operations were also used but have only a local influence.

Results are presented in the table below and should be read in conjunction with the notes following.

Irumafimpa and Kora Mineral Resource by Deposit and Category March 2017										
Deposit	Resource Category	Tonnes	Gold		Silver		Copper		Gold Equivalent	
		Mt	g/t	MOz	g/t	MOz	%	Mlb	g/t	MOz
Irumafimpa	Indicated	0.56	12.8	0.23	9	0.16	0.28	37	13.4	0.24
	Inferred	0.53	10.9	0.19	9	0.16	0.27	74	11.5	0.20
Kora/Eutompi	Inferred	4.36	7.3	1.02	35	4.9	2.23	215	11.2	1.57
<b>Total Indicated</b>		0.56	12.8	0.23	9	0.16	0.3	4	13.4	0.24
<b>Total Inferred</b>		4.89	7.7	1.21	32	5.06	2.0	218	11.2	1.76

*M in Table is millions. Reported tonnage and grade figures are rounded from raw estimates to reflect the order of accuracy of the estimate. Minor variations may occur during the addition of rounded numbers. Gold equivalents are calculated as AuEq = Au g/t + Cu%\*1.52+ Ag g/t\*0.0141.*



- The sample exploration database was supplied by Barrick in MS Access format.
- Estimation undertaken in Surpac™, using ordinary kriging (“OK”) in unfolded space.
- The estimation block size was 10m in Y and 10m in Z with width estimated in unfolded space as a variable. Grade was interpolated by domain using OK estimation with parameters based on directional variography by domain. Thickness of the vein was also estimated by OK estimation.
- Results validated against drill data and Inverse Distance Squared, Nearest Neighbour, Gram M Accumulation estimates and Ordinary Krige uncapped estimates.
- Minimum mining width of 1.2 m horizontal. Grade was diluted to account for minimum width.
- This mineral resource estimate is based on 78,935 metres of drilling from 767 holes, and 18,312 metres of assayed intervals across all lodes. A single vein composite was used for each drill intercept on each lode – cut-off for selection was 3 m-gms Au Equivalent. There are a total of 2,003 vein composites across 19 veins, including 349 face composites.
- A mined out area representing the extent of current mining projected across all lodes were removed from the final model as the exact location of individual stopes is not clear.
- Top caps were applied to the composites for each vein. Grade caps were selected to restrict the influence of outliers where drilling was sparse, and varied by vein.
- A minimum of 2 samples and maximum of 12 samples were used for each block. Search distances varied by lode and reflect the variogram ranges of 100-200 m, maximum projection beyond last drill-hole is 50 m.
- The volume for each vein was defined by a wireframe in 3D space and is used to constrain the resource blocks.
- Lower cut-off grades for reporting were a combination of thickness and grade reflecting mining methods, metallurgical recovery, and royalties:
  - Narrow Vein - Shrink Stopes - 1.2 m – 3 m thick and  $\geq 6\text{g/t AuEq}$
  - Wide Vein – Mechanised Stopes -  $>3$  m thick and  $\geq 5\text{g/t AuEq}$
- Resource categories are based on estimation confidence and number of informing samples as a guide. Blocks shown in the Long Section have been coloured by resource category. Turquoise blocks are unclassified blocks with only one sample supporting them and are not included in the resource estimate.
- Vein blocks in the Irumafimpa deposit have been assigned a density of  $2.9 \text{ t/m}^3$  and vein blocks in the Kora deposit have been assigned a density of  $2.8 \text{ t/m}^3$ .

## 1.4 2018 KORA NORTH RESOURCE ESTIMATE

The updated Mineral Resource estimate for the Kora North deposit comprises:

- a Measured Resource of 154,000 tonnes @ 18.7 g/t Au, 8.9 g/t Ag and 0.5% Cu;
- an Indicated Resource of 690,000 tonnes @ 11.6 g/t Au, 14.1 g/t Ag and 0.8% Cu and
- an Inferred Resources of 1.92 million tonnes @ 11.4 g/t Au, 13.1 g/t Ag and 0.7% Cu.

The total Measured, Indicated and Inferred Resource covers an area of approximately 400 to 500 metres on strike by 200 to 350 metres vertically.

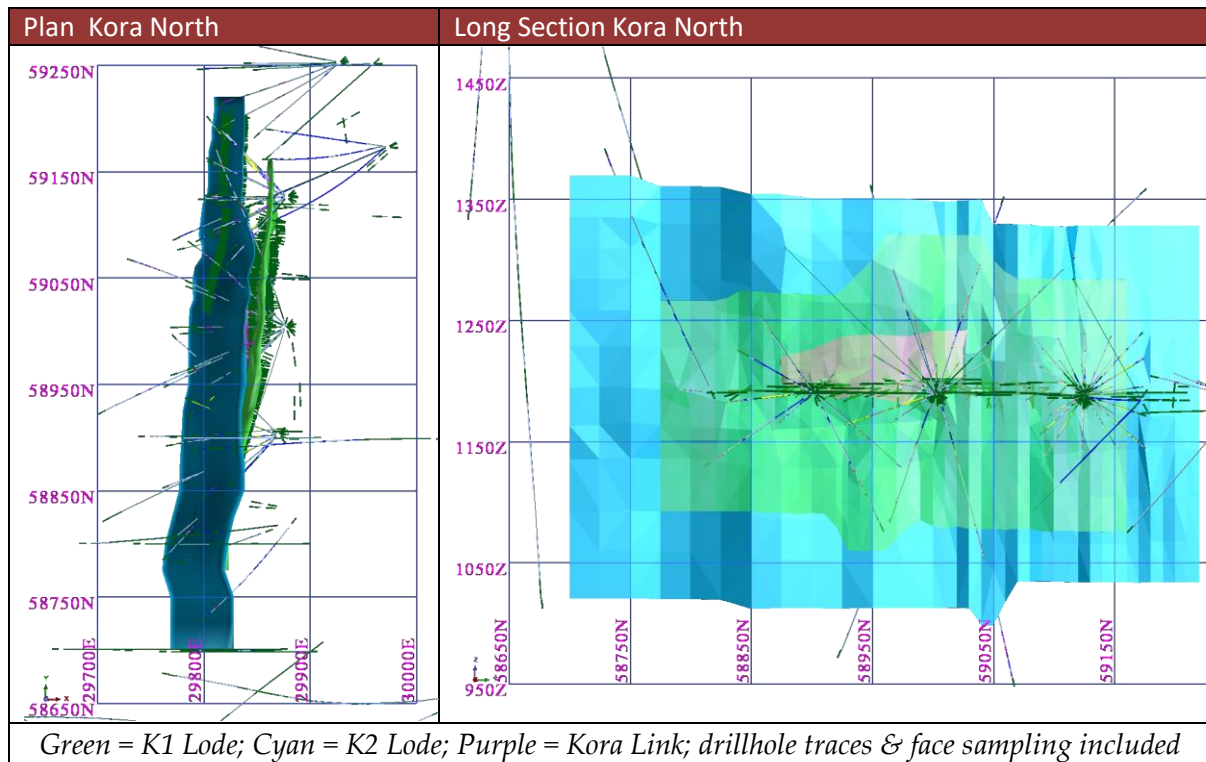
Global Mineral Resources Kora North Gold-Copper Mine September 2018									
Category	Tonnes	Gold		Silver		Copper		AuEq	
		Mt	g/t	Mozs	g/t	Mozs	%	Mlbs	g/t
Measured	0.15	18.7	0.09	8.9	0.04	0.5	1.6	19.6	0.09
Indicated	0.69	11.6	0.26	14.1	0.31	0.8	11.8	12.9	0.29
<b>Total M &amp; I</b>	<b>0.85</b>	<b>12.9</b>	<b>0.35</b>	<b>13.1</b>	<b>0.36</b>	<b>0.7</b>	<b>13.3</b>	<b>14.1</b>	<b>0.39</b>
<b>Inferred Total</b>	<b>1.92</b>	<b>10.7</b>	<b>0.66</b>	<b>13.3</b>	<b>0.82</b>	<b>0.7</b>	<b>29.5</b>	<b>11.9</b>	<b>0.74</b>

Mineral Resources estimated and verified by Simon Tear (PGEO), a director of independent consultancy H & S Consultants Pty. Ltd., Sydney, Australia (September 2018)

Key Assumptions and Parameters were:

- Mineralisation comprises two parallel, steeply west dipping, N-S striking quartz-sulphide vein systems, K1 & K2, within an encompassing dilatant structural zone hosted by phyllite. An additional structure, the Kora Link, has also been defined and provides a possible link between the two main vein systems.
- Underground drilling consists of diamond core for a range of core sizes depending on length of hole and expected ground conditions. Sampling is sawn half core under geological control and generally ranges between 0.5m and 1m. Underground face sampling is completed for every fired round and is to industry standard.
- QAQC data indicated no significant issues with the accuracy of the on-site analysis.
- Core recovery of the mineral zone was initially 90%, this has improved to >95%. There is no relationship between core recovery and gold grade.
- Geological logging is consistent and is based on a full set of logging codes covering lithology, alteration and mineralisation.
- The geological interpretation of the vein systems is represented as 3D wireframe solids snapped to a combination of diamond drillhole data and underground face sampling. Definition of the wireframes is based on identified gold mineralisation in drillcore nominally at a 0.2g/t Au cut off in conjunction with geological control/sense and current mining widths.
- Gold Equivalent (Au Eq) g/t was calculated using the formula  $Au\ g/t + (Cu\% \times 1.53) + Ag\ g/t \times 0.0127$ . (No account of metal recoveries through the plant have been used in calculating the metal equivalent grade. However, production is currently achieving 93% metal recovery for both gold and copper and gold is currently providing 95% and copper 5% of the total revenue of the mine)
- Gold price US\$1,300/oz; Silver US\$16.5/oz; Copper US\$2.90/lb

### Plan and Long Section of the Kora North Mineral Lodes



The wireframes were used to extract a total of 2,159 1m composites from the drillhole & sampling database for gold, copper and silver. No gold top cuts were applied to composites for the two main vein systems; the Kora Link had a top cut of 200ppm Au. Silver top cuts of 50 and 200ppm were applied to the K1 and K2 composite data respectively. No top cut was applied to the copper composites. Coefficients of variation for the gold composite data were relatively low for this mineral type, around the 2 to 2.5 mark. Variography indicated modest strike continuity with a tendency for greater grade continuity in the dip direction, downhole grade continuity was poor as would be expected for this type of mineralisation.

Grade interpolation of the composite data was completed using Ordinary Kriging with a block size of 1m by 5m by 5m to reflect the close spaced drilling for K1 and the face sampling. A larger block size check model indicated no evidence of over-smoothing of gold grade with the smaller block size.

Default average density values have been applied to the different lodes. The defaults are based on limited core measurements using the Archimedes Method (weight in air/weight in water).

An initial 3 Pass search strategy was applied in the grade interpolation with two additional passes. Search ellipse parameters are listed below. Search ellipse orientations generally reflected the subtle changes in dip and strike of the vein systems. Two search domains were used for K1, four search domains were used for K2 and one for the Kora Link.

Pass No	X radius (m)	Y radius (m)	Z radius (m)	Min Data	Min Octants	Max Data
1	2	25	25	12	4	32
2	4	50	50	12	4	32
3	4	75	75	12	4	32
4	5.25	100	100	12	4	32
5	5.25	100	100	6	2	32

Allocation of the classification of the Mineral Resources is derived from the search pass numbers which essentially is a function of the drillhole and face sample data point distribution. Additional considerations were included in the assessment of the classification in particular the geological understanding and complexity of the deposit, sample recovery, quality of the QAQC sampling and outcomes, density data and reconciliation with production.

<b>Pass Category</b>	<b>Resource Classification</b>
1	Measured
2	Indicated
3	Inferred
4	Inferred
5	Inferred

All material mined within the mineral wireframes up to the effective date (as of the end of September 2018) has been removed from the model. Gold reconciliation of the resource model with production up to the effective date has been good with the mill production in terms of recovered ounces being less than 10% above that estimated by the model.

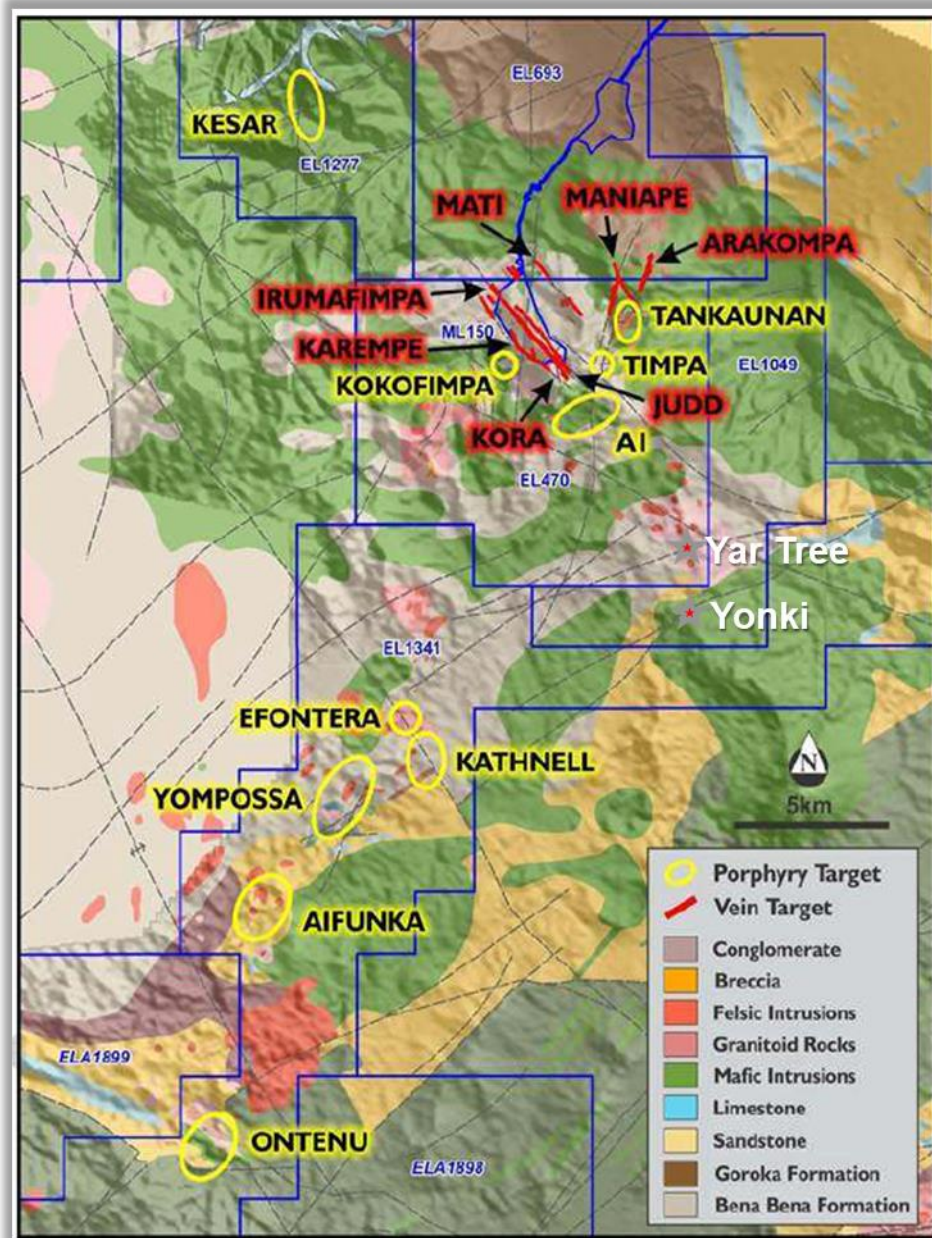
The Inferred Mineral Resources in this estimate have a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.

Environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues may materially affect the estimate of Mineral Resources.

Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.

## **1.5 EXPLORATION TARGETS**

The Kainantu project is located in a recognized copper-gold province, as evidenced by the underlying geology and presence of nearby major projects operated by global majors Barrick, Newcrest and Harmony. There remain a significant number of major untested and early stage targets. Within ML150 are the Kora lodes which are strongly mineralized at the limit of drilling and open in all directions, as well as the Judd, Karempé and other unnamed mineralized lodes parallel to defined resources which have economically attractive grade in surface and/or drill samples from limited work to date.



**Kainantu geology and known vein and porphyry deposits and prospects.**

*(Source: K92, 2018)*

## 1.6 PREVIOUS MINING AND PROCESSING

The processing plant built to treat the Irumafimpa lodes was demonstrated in the previous operating phase between 2006 and 2008 (HPL and Barrick) to be generally well suited to the mineralization in that deposit.

The underground mining operation and process facility were not operated between January 2009 and September 2016. Rehabilitation by K92ML of the Irumafimpa mine, process plant and associated infrastructure commenced in March 2016. Remedial work on the 800 Portal and Incline, the main mine access for the Irumafimpa mine, was completed in June 2016 with the upper working levels of the mine accessible and ventilation re-established. Refurbishment of the Kainantu Processing Plant was completed in September 2016 and the first batch of underground ore from Irumafimpa treated in October 2016.



Mining Lease No. 150 was renewed on 23 January 2015 for a period of 10 years to 13 June 2024. In order to comply with the terms of the renewal of ML150, K92ML was required to refurbish the mine and mill by December 31, 2016. This was effectively accomplished in September 2016.

An additional requirement was that operations and production from the Kora deposit must commence on or before 30 June 2018.

K92 started the Kora mine project by completing the underground incline drive from Irumafimpa to Kora and commencing underground drilling. Since August 2017 operations have been focused on the Kora deposit with underground drilling and development following up on the Kora deposit extension (now called Kora North) discovery.

K92 announced the declaration of commercial production effective February 1, 2018. K92 defined commercial production as having commenced stope production underground, achieved a minimum of 60% of designed gold production and a minimum of 90% of designed metal recovery from the process plant over a 30-day period.

On 30 June 2018, K92 formally advised the Mineral Resources Authority that it had met the requirement to commence production from the Kora deposit and had already produced over 20,000 AuEq ozs from Kora during the first half of 2018.

## **1.7 SCOPING STUDIES**

The preliminary economic assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

It should be noted that the mine plan and scoping studies prepared by AMAD for the Kora North and Kora deposits are not based on Mineral Reserves. The estimates of tonnes and grade reported and scheduled in both the Kora North and Kora Scoping Studies do not constitute a Mineral Reserve because: -

- The Mineral Resource estimate from which the tonnes and grade are derived is predominantly Inferred Resources. Inferred Resources are at too low a level of confidence to allow conversion to Mineral Reserves.
- There is insufficient geotechnical information to be confident in development and extraction design parameters and costs and the mine plan can only be considered conceptual.
- Limited metallurgical test work has been completed for the copper-gold mineralization and further work will be required to confirm the processing cost and recovery assumptions. However, all material treated in 2018 has been from the Kora North mining area which to date support the assumptions made.

Any reference to “ore” in the Scoping Study is simply a reference to that part of the Mineral Resource, with appropriate adjustment for dilution and loss, that would be intended as mill feed, rather than waste, and which would be a Mineral Reserve if all requirements of CIM Definition Standards for Mineral Resources and Mineral Reserves were met.

Non-mining economic and processing parameters assumed and referred to in the studies are conceptual. They were applied for the purpose of identifying the part of the Resource that notionally may be economic, in order to prepare conceptual extraction designs. Schedules are based on conceptual development and stoping quantities and not practical designs. Cashflow schedules are based on these assumed parameters. They should be treated with caution, and they should not be interpreted as a measure of the value of the deposit.

### 1.7.1 Kora North

The preliminary economic assessment for Kora North is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Additionally, geotechnical assessment is required to confirm the feasibility of stope designs. There is no certainty that the preliminary economic assessment will be realized.

Key estimates from the Kora Mine Scoping Study prepared by AMDAD are:

- Planned treatment of 1.71Mt tonnes at 13 g/t Au, 12 g/t Ag, 0.63%Cu over the 5.25 LOM plan.
- This would generate an estimated positive cash flow of US\$499 million using current metal prices. This cashflow includes conceptual allowances for capital.
- Production of an estimated average of 135,000 Au ozs and 2,100t Cu per annum over a five-year period from Year 2019 through to Year 2023.
- An estimated Pre-tax NPV of US\$402 million; using current metal prices, exchange rate and a 5% discount rate;
- Capital Expansion Cost is estimated to be US\$13.6 million. Development Capital Cost is estimated to be a further US\$59.3 million and Sustaining capital is US\$11.2 million over the LOM.
- Operating Cost per tonne is estimated to be US\$163/tonne for the LOM.

### 1.7.2 Kora

The preliminary economic assessment for Kora is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Additionally, geotechnical assessment is required to confirm the feasibility of stope designs. There is no certainty that the preliminary economic assessment will be realized.

Key estimates from the Kora Mine Scoping Study prepared by AMDAD are:

- Over a 9 year operating life the plant would treat 3.2 Million tonnes averaging 7.1 g/t Au, 25 g/t Ag and 1.7% Cu.
- This would generate an estimated positive cash flow of US\$532 million using current metal prices. This cashflow includes conceptual allowances for capital.
- Production of an estimated average of 90,000 Au ozs and 6,500t Cu per annum over an eight-year period from Year 2024 through to Year 2031.
- An estimated Pre-tax NPV of US\$374 million; using current metal prices, exchange rate and a 5% discount rate;
- Kora Capital Cost is estimated to be US\$38.4 million. Development Capital Cost is estimated to be a further US\$87.3 million and Sustaining capital is US\$6.0 million over the LOM.
- Operating Cost per tonne is estimated to be US\$153/tonne for the LOM.

### 1.7.3 Kora North and Kora Combined Mine Plan

The preliminary economic assessment for the combined Kora North and Kora plan is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Additionally, geotechnical assessment is required to confirm the feasibility of stope designs. There is no certainty that the preliminary economic assessment will be realized.

Key estimates from the Kora North and Kora Mine Scoping Study prepared by AMDAD are:

- Over a 13 year operating life the plant would treat 4.9 Million tonnes averaging 9.0 g/t Au, 20 g/t Ag and 1.3% Cu.
- This would generate an estimated positive cash flow of US\$1,031 million using current metal prices. This cashflow includes conceptual allowances for capital.
- An estimated Pre-tax NPV of US\$710 million; using current metal prices, exchange rate and a 5% discount rate;

#### 1.7.4 Treatment Plant Upgrade

In August 2016 Mincore completed a scoping study on the requirements for an upgrade of the existing plant to allow treatment of Kora ore at a proposed rate of 400,000 tpa. This was subsequently updated by Mincore in 2018 following the in-progress installation of the gravity gold circuit and new lime preparation and dosing facility.

Mincore concluded that:

- There is sufficient crushing and milling power (comminution) to grind 50 tph to P80 of 106 µm.
- The current two stage crushing circuit is rated at 68tph producing a product size P80 of 10-12mm. However, the secondary crusher has been capacity limited during operations in 2018 and a new larger secondary crusher is proposed, with the existing crusher relegated to standby service. The new larger secondary crusher will also provide a better crushed ore size distribution to maximise throughput of the downstream milling circuit.
- Additional flotation capacity is required to achieve acceptable residence times for each cell. There is sufficient space to install additional cells if future test work identifies a requirement for longer residence time.
- The existing concentrate thickener and filter is adequate for 400,000tpa of Kora feed averaging 1.7% copper.
- The existing tailings line is adequate but a full pump upgrade will be required.

## 1.8 RECOMMENDATIONS

### 1.8.1 Exploration

- Drilling should continue to concentrate on infill drilling of current resources and extensions to veins within ML 150.

### 1.8.2 Mine

- Geotechnical data collection should be a key part of the exploration drilling at Kora North and Kora, to inform specialist geotechnical studies. The geotechnical studies are required to confirm key mine design parameters.
- Groundwater investigation by hydrogeological specialists are recommended to determine expected and on-going water inflows, and as the basis for an underground mine water management plan.
- A comprehensive ventilation study is required to analyse all ventilation options including VentSim modelling of airways to determine airflows, pressures, air power and fan specifications. Vent rise paths will need geotechnical investigations.
- The feasibility of raiseboring holes from surface greater than 500m long has to be investigated considering the implications, timing and costs involved.
- Appropriate assessments and management plans are required to address the mine materials handling including improvements required for the main decline hauling surface, investigation of haulage-way profile to identify tight points, confirm ability for trucks to pass at acceptable

speed, design and excavation of additional passing bays along the decline to increase the efficiency of the truck haulage system and assessment of number of additional trucks and truck size required to meet the ramp up targets.

### 1.8.3 Treatment Plant

- Confirmatory metallurgical test work should be completed on an ongoing basis to confirm that the metallurgical performance indicated in the initial metallurgical test work completed by Barrick is achievable.
- Confirmatory test work should be completed to optimise flotation concentrate grade and recovery at the expanded throughput.
- Confirmation of the timing for wall lifts for the TSF have to be confirmed, as it appears a lift will be required in 2020.

## 2 INTRODUCTION

### 2.1 ISSUER

This report is an independent technical report dated 7 January 2019 of the geology, exploration, mineral resource estimates, and mining scoping studies for the Kora North and Kora gold-copper deposits at the Kainantu project. The Kainantu property covers a total area of 405 sq.km and is located in the Eastern Highlands Province of Papua New Guinea, approximately 180 km west-northwest of Lae.

In September 2018 K92 Mining Inc. (“K92”) requested Nolidan Mineral Consultants (“Nolidan”), H&S Consultants (“H&SC”), Australian Mine Design and Development (“AMDAD”), and Mincore Pty Ltd (“Mincore”) to prepare a report in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) incorporating the results of recently completed mineral resource estimates and mine scoping studies of the Kora North and Kora gold-copper deposits and plant upgrade studies.

H&SC were engaged by K92 to prepare a mineral resource estimates for the newly discovered Kora North deposit. Nolidan had previously prepared a mineral resource estimate for the Kora deposit which was reported in March 2017. AMDAD was engaged to undertake a Scoping Study for the development of the Kora North and Kora deposits. In conjunction with the Kora Scoping Study, Mincore was engaged to carry out a detailed study on the potential expansion of the existing processing plant to treat 400,000tpa of ore primarily from the Kora deposit.

As part of the Kora North and Kora studies AMDAD prepared conceptual cashflows to provide guidance in relation to the economic viability of those mine plans. Those cashflows are the basis of the Preliminary Economic Assessment presented in this Technical Report.

K92 intends that this report be used as an Independent Technical Report as required under Part 4 “Obligation to File a Technical Report” of NI 43-101 to support publicly disclosed information.

### 2.2 TERMS OF REFERENCE AND PURPOSE

At K92’s request, the scope of the report includes the following:

- Production of an Independent Technical Report prepared in accordance with NI 43-101.
- Preparation of a mineral resource estimate for the Kora North deposit
- Description of mining and milling infrastructure at Kainantu.
- Summarize the results of the preliminary economic assessment (“scoping study”) of the Kora North and Kora deposits.
- Summarize the studies on upgrading the capacity of the process plant.

### 2.3 INFORMATION USED

This report is based on technical data provided by K92. K92 provided open access to all the records necessary to enable a proper assessment of the project and resource estimates. K92 has warranted in writing that full disclosure has been made of all material information and that, to the best of the K92’s knowledge and understanding, such information is complete, accurate and true. The report also summarises information provided in previous recent NI 43-101 reports:

Independent Technical Report and Resource Estimate, Kainantu Project, Papua New Guinea, dated 06 March 2015.

Independent Technical Report, Resource Estimate and Summary of Mining Facilities, Kainantu Project, Papua New Guinea, dated 01 May 2015.

Independent Technical Report, Resource Estimate and Summary of Mining Facilities, Kainantu Project, Papua New Guinea, dated 15 April 2016.

Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 02 March 2017.

Additional relevant material was acquired independently from a variety of sources. This material was used to expand on the information provided by K92 and, where appropriate, confirm or provide alternative assumptions to those made by K92.

With respect to Items 6, and 9 through 13 of this report, the author has relied in part on historical information including exploration reports, technical papers, sample descriptions, assay results, computer data, maps and drill logs generated by previous operators and associated third party consultants. Historical documents and data sources used during the preparation of this report are listed in Item 27: References.

## **2.4 SITE VISIT BY QUALIFIED PERSONS**

Mr. Anthony Woodward of Nolidan visited the Kainantu Gold Mine in November 2014 and November 2016.

Mr. Simon Tear of H&SC visited the site from 21<sup>st</sup> to 23<sup>rd</sup> October 2018

Mr. Chris Desoe of AMDAD visited the Kainantu site in June 2016.

## **3 RELIANCE ON OTHER EXPERTS**

The author has relied on reports, opinions or statements of legal or other experts who are not Qualified Persons for information concerning legal, environmental, political or other issues and factors relevant to this report.

## **4 PROPERTY DESCRIPTION AND LOCATION**

The Kainantu property covers a total area of 405 sq.km and is located in the Eastern Highlands Province of Papua New Guinea, approximately 180 km west-northwest of Lae (Figure 1). The project is located at the approximate centre of the Project, at 6°06'25" S Latitude and 145°53'27" E Longitude. The property comprises four exploration licences, EL470, EL693, EL1277 and EL1341, one mining licence, ML150, two mining easements, ME80 and ME81, and one licence for mining purposes, LMP78. Tenements are owned 100% by K92 Mining Limited ("K92ML") but there is an understanding in-place for a 5% share to be divested to the local landowners. Further information on this understanding is detailed in Section 4.3.1. Memorandum of Understanding (MOU). To the extent known by Nolidan, there are no option agreements or joint venture terms in place for the property. A tenement map is shown in Figure 1 and tenement details are summarised in Table 1.

The Project as described herein is 100% owned by K92 Mining Limited ("K92ML"); a company incorporated in Papua New Guinea, which is 100% owned by K92 Holdings (PNG) Limited ("K92PNG"), a 100% owned subsidiary of K92 Holdings International Limited ("K92 Holdings").

On August 21, 2014, Otterburn, K92 Holdings and the K92 Holdings shareholders entered into a Share Exchange Agreement, pursuant to which Otterburn agreed to acquire all of the issued and outstanding shares of K92 Holdings, from K92 Holdings shareholders, in consideration for issuing shares in the capital of Otterburn. However, after further consideration by the parties, it was determined that effecting a tri-party merger under BVI law was more appropriate in order to effect Otterburn's acquisition of K92 Holdings. Accordingly, Otterburn entered into an agreement with K92 Holdings, pursuant to which K92 Holdings will merge with a newly created British Virgin Islands subsidiary of Otterburn, and whereby the Otterburn will acquire all of the outstanding shares of K92 Holdings, in exchange for shares of Otterburn.

K92 (formerly Otterburn) is a company incorporated under the laws of British Columbia, Canada; the common shares of which are publicly listed on the TSX Venture Exchange.

Nolidan has not undertaken any title search or due diligence on the tenement titles or tenement conditions and the tenement's status has not been independently verified by Nolidan.

K92ML is the registered holder of the following tenements in PNG (MRA, 2016), as issued by the applicable government authorities in accordance with the PNG Mining Act 1992 (the "Mining Act"):

- Mining Lease 150 ("ML150"), effective until June 14, 2024;
- Mining Easements 80 and 81 ("ME80" and "ME81"), each effective until June 14, 2024;
- Licence for Mining Purposes 78 ("LMP 78"), effective until June 14, 2024;
- Exploration Licence 470 ("EL470"), effective until February 05, 2019;
- Exploration Licence 693 ("EL693"), effective until February 05, 2019;
- Exploration Licence 1341 ("EL1341"), effective until June 20, 2018. K92ML have lodged an application for renewal for a further two years;
- Exploration Licence 1277 ("EL1277") which expired on May 20, 2009. The PNG Minister for Mining rejected K92ML's application for renewal on December 5, 2011. K92ML initiated legal action to compel the Minister for Mining to overturn the decision, but the court instructed the parties to instead try to reach an out-of-court settlement. Negotiations in that regard have to date been unsuccessful; and if not settled will revert to the courts for a decision.

The renewal of ML150, ME80, ME81, and LMP78 occurred immediately prior to the acquisition of K92ML by K92PNG.

K92PNG acquired K92ML from Barrick (Niugini) Limited ("Barrick") pursuant to an agreement dated June 11, 2014 (the "K92ML Purchase Agreement") (which closed March 6, 2015), for the sum of US\$2,000,000. Under the terms of that agreement K92PNG is obligated to make additional payments of up to US\$60,000,000 as follows:

- (i) US\$20,000,000 upon K92PNG determining 1,000,000 ounces of gold equivalent (based on in-situ and mined product classified as measured mineral resource, indicated mineral resource, probable ore reserve or proven ore reserve); and
- (ii) US\$5,000,000 upon upon K92PNG determining each additional 250,000 ounces of gold equivalent (on the same bases as stated above) up to an aggregate of 3,000,000 ounces.

The obligation to pay additional payments will cease on March 6, 2025.

The PNG National Government expressed its desire to recommence mining on ML150 as soon as possible to deliver benefits to the local community, Provincial Government and Nation (Barrick 2014).

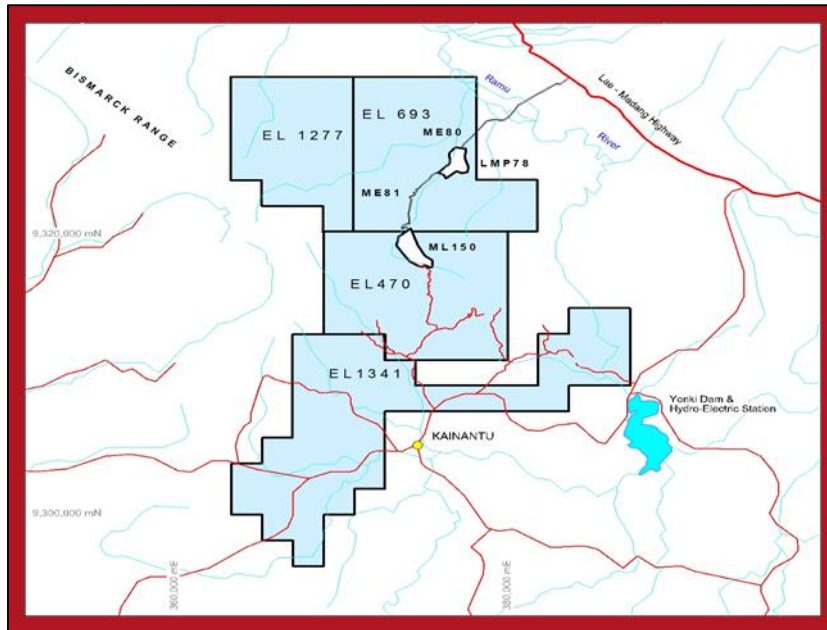


Figure 1. Kainantu Project Location and Tenements.

Tenement No.	Grant Date	Expiry Date	Renewal or Appln. Date	Area (km <sup>2</sup> )	Rent (2016/2018) Kina	Owners <sup>#</sup>
EL470	5/2/1982	4/2/2019	Current	95.0	12,769	K92ML
EL693	5/2/1986	4/2/2019	Current	95.0	12,769	K92ML
EL1277	30/5/2001	29/5/2009*	TBA*	68.3	9,400	K92ML
EL1341	21/6/2004	20/6/2018**	TBA*	146.8	20,210	K92ML
ML150	4/6/2002	14/6/2024	Current	2.9	3,456	K92ML– 95% Landowners– 5%***
ME80****	14/6/2002	14/6/2024	Current	0.29	N/A	K92ML
ME81****	14/6/2002	14/6/2024	Current	0.35	N/A	K92ML
LMP78****	14/6/2002	14/6/2024	Current	2.1	2,512	K92ML

Source: K92ML 2018

Table 1. Project Tenure Details.

\* Last approved renewal was to 29/05/2009. Application for renewal of tenure to 29/05/2011 was rejected by the Minister for Mining on 05/11/2011. K92ML undertook legal action to compel the Minister to overturn the decision and renew the lease. This was not successful and K92ML continues to negotiate settlement terms and the date for renewal.

\*\* Application for renewal of tenure to 20/6/2020 lodged by K92ML on 20/3/2018.

\*\*\* Ownership of ML150 currently 100% K92ML. 5% pledged under commercial terms to Landowners in the 2003 Memorandum of Understanding, and ratified by the 2014 K92ML Purchase Agreement.

\*\*\*\* ME80, ME81 and LMP78 are linked to the current ML150.

## 4.1 TENURE

### 4.1.1 Mining Lease No 150 Renewal Conditions

Mining Lease No. 150 was renewed on 23 January 2015 for a period of 10 years to 13 June 2024. Conditions of the lease renewal are summarised below:

- The lessee must comply with the Kainantu Mine Project Proposals for Development Tenure Extension Application 2014 dated 10 June 2014.
- The mine must comply with the Mining Safety Act.



- The Lessee must comply with all relevant legislation.
- The change in control of K92ML must occur within 3 months of ML renewal.
- The mine and mill must be completely refurbished by 31 December 2016 (this variation to the original condition 5 of the lease renewal was approved by the Mining Minister on December 07, 2015).
- Operations and production from the Kora deposit must commence on or before 30 June 2018.
- Develop a detailed rehabilitation and Mine Closure Plan at least 5 years prior to the planned closure of the mine or the expiration of the Mine lease or any extended Mining Lease, whichever occurs first.
- Any public statement in relation to the Mining Lease and Kainantu Gold Project must also disclose any relevant conditions that form part of the extension of the Mining Lease.

#### 4.1.2 Expenditure Commitments

The tenement package has current annual rents of PGK 85,868.

Approved two-year work programs include a minimum expenditure of PGK 1,200,000 for EL470 and PGK 800,000 for EL693 (for the period ending Feb 4, 2019). A proposed expenditure of PGK 800,000 was submitted for EL1341 (for the period commencing June 21, 2018).

## 4.2 ROYALTIES

The Mining Act 1992 (Act) provides that all minerals at or below the surface of any land (i.e. gold, silver, copper and other minerals) are the property of the State. K92ML, pursuant to the Mining Lease from the State, owns what is mined from the orebody.

The tenements are subject to royalties and interests in favour of the Government of Papua New Guinea in accordance with the Mining Act 1992 (Act). The holder of a mining lease or a special mining lease under the Act is required to pay a royalty to the State equal to 2% of either:

- the Free on Board (FOB) value of the minerals, if they are exported without smelting or refining in Papua New Guinea; or
- the Net Smelter Return from the minerals, if they are smelted or refined in Papua New Guinea.

No other royalty agreements exist over the tenement package.

While not strictly a royalty cost, the PNG government imposes a second cost on mining projects, that of the MRA Levy. This levy is 0.25% of mine revenue (there are no deductions allowed for concentrate transport, smelting and refining).

#### 4.2.1 States Right to Acquire 30% Interest In Mining Projects

Under the laws and upon grant of a mining licence (ML) or a special mining licence (SML) the State may elect at its discretion to take, at sunk cost, up to a 30% participating interest in any major mineral development in PNG. Upon exercise of that option, the State will fund its share of capital and ongoing costs and the mine developer will be repaid its share of sunk costs.

In respect of ML150, the State waived its right to acquire a 30% interest in the existing mining licence when they were first granted and has no similar rights under the ML renewal process. However, the State retains the option in respect of the Exploration Licences should any be converted into a Mining Licence or Special Mining Licence.

### **4.3 CARE AND MAINTENANCE**

In January 2008, Barrick sought to place the mine into care and maintenance. The basis of the care and maintenance application was that the mining operation was not economic at the market conditions existing at that time. Barrick submitted that it would undertake significant exploration on ML150 and surrounding tenements to prove up sufficient resources to enable mining operations to resume. Barrick received approval to have the mine in care and maintenance via the Variation to the Approved Purposes for Mining Lease No. 150 dated 13 February 2009 which was subsequently extended until February 2013, when the Mining Advisory Council determined that extension of care and maintenance was appropriate provided a Mine Closure Plan was submitted.

Mining Lease No. 150 was renewed on 23 January 2015 for a period of 10 years to 13 June 2024.

Conditions of the lease renewal are discussed in Section 4.1.1 of this report.

Rehabilitation by K92ML of the Irumafimpa mine, process plant and associated infrastructure commenced in late March 2016. Remedial work on the 800 Portal and Incline, the main mine access for the Irumafimpa mine, was completed in June 2016 with the upper working levels of the mine accessible and ventilation re-established. Refurbishment of the Kainantu Processing Plant was completed in September 2016 and the first batch of underground ore from Irumafimpa treated in October 2016.

K92 started the Kora mine project by completing the underground incline drive from Irumafimpa to Kora and commencing underground drilling. Since August 2017 the company has been focused on the Kora deposit with underground drilling and development following up on the Kora deposit extension (now called Kora North) discovery.

K92 announced the declaration of commercial production effective February 1, 2018. K92 defined commercial production as having commenced stope production underground, achieved a minimum of 60% of designed gold production and a minimum of 90% of designed metal recovery from the process plant over a 30-day period.

### **4.4 OTHER SIGNIFICANT FACTORS AND RISKS**

Environmental permitting, tailings disposal, mine closure plans, and landowner compensation agreements are discussed in Section 20: "Environmental Studies, Permitting, and Social or Community Impact" of this report.

## **5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 PHYSIOGRAPHY**

The Property lies within an area of mostly rugged topography, with transecting rivers forming lower lying areas. Elevations range from 400m to 1600m above sea level. Vegetation is mostly primary rainforest with areas of shifting agriculture in valley floors.

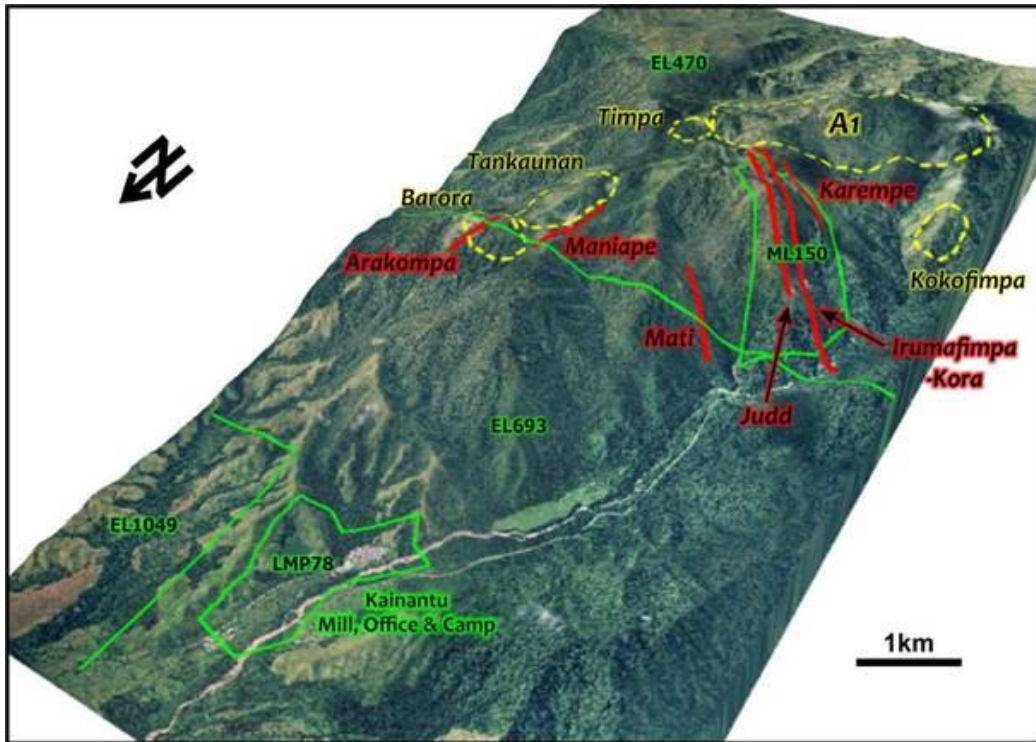


Figure 2. Oblique View of Northern Part of Property, Showing Relief and Location of Main Infrastructure.  
Source: Barrick 2012

## 5.2 ACCESS

The property area is accessed by a two-hour drive along the sealed Lae-Madang Highway from Lae. Lae is the capital city of the Morobe Province and second largest city in PNG. It is serviced by daily flights from Port Moresby and other PNG centres and also hosts the largest cargo port in PNG.

The property is serviced by a 10 km long formed access road from the Lae-Madang Highway, commencing at Gusap Airstrip to the Kumian Process Plant and Office facility. The access road crosses one single lane bridge at the Ramu River. From the process plant site, a formed haul road travels 6.5 km to the 800 Lower Portal of the mine. The haul road crosses three major single lane bridges.

Access and haul roads span 6m width and are constructed within two Mining Easements (ME's 80 and 81) commencing at the Ramu Bridge. The haul road rises 391m in elevation over its total length. These roads are graded and reformed generally twice a year in low traffic conditions, and have not deteriorated significantly in high rainfall seasons.

## 5.3 CLIMATE

The climate across the Property is variable due to topography. Hot temperatures and wet conditions characterize the climate at Kainantu. Daytime temperatures reach 30°C dropping to night time lows of 20°C. A pronounced wet season occurs between November and April, although rainfall is common throughout the year. Rainfall averages 235 mm/month during the November to April wet season, and 137 mm/month during the dry season. Annual rainfall averages approximately 2000 mm. Project operation/exploration is subject to the weather; reduced visibility when cloudy prevents operation of helicopters and heavy rainfall or earthquakes can trigger landslides.

## 5.4 LOCAL RESOURCES

The Property site offices are located 140 km from Lae, 21 km from Kainantu township and 56 km from Goroka (Table 2). Goroka is the Capital of Eastern Highlands Province and contains Local and Provincial Level Government Offices.

**Table 2. Local Resources to Property**

Local Resources	Lae (Morobe Province)	Goroka	Kainantu
Population:	~100,700	~18,500	~6,700
Elevation:	10m	1600m	1570m
Distance from Lae:	-	285km	170km
Distance to Property Site Offices	140	56	21
Airport:	Runway Length 2440m. 1 Runway;	Runway max 1646m. 2 x runways.	In use
Commercial air travel:	+ 11 flights daily	3 flights daily. 1 hr flight from Port Moresby.	No
Facilities:	Many	Schools, hospital, police station, district and provincial court, tertiary education, fuel stations, banks	School, hospital, police station, district court, fuel stations, banks. Local Level Government Offices.

#### 5.4.1 Yonki Dam and Ramu Hydro Electric Power Station

Yonki Dam provides water for the Ramu Hydro Power Station and the Yonki Toe of Dam Power Station operated by PNG Power Ltd. The Dam commissioned in 1991 on the upper Ramu River, has a 335M m<sup>3</sup> capacity, a 60m high earth fill dam wall with 680m long crest.

Mining Projects including Hidden Valley created a need for additional power output. The Yonki Toe of Dam Project was commissioned in 2013 to help meet that requirement.

Currently the Ramu 1 Hydro Power station is supplying 54 MW from three generators on to the Ramu Grid while the Yonki Toe of Dam supplies 14MW. They are supplemented by 4MW from the Pauanda Hydro Power station, 10MW from the Baiune Hydro Power station at Bulolo in Morobe Province and a combined thermal generation capacity of 20MW from the diesel power stations in Lae, Madang and the Highlands centres, giving a total generation capacity of 102MW into the Ramu Grid (PNG Power website, 2014).

The grid serves Lae, Madang & Gusap in the Mamose Region, and Wabag, Mendi, Mt Hagen, Kundiawa, Goroka, Kainantu & Yonki in the Highlands.

#### 5.4.2 Gusap Airstrip

The Gusap Airstrip is a fully licenced, international grass strip located in the Ramu Valley and maintained jointly by the project and Ramu Agricultural Industries mainly for use in emergencies and for charter flights.

### 5.5 INFRASTRUCTURE

The Kainantu mine is located within ML150 and the main Kainantu exploration camp and processing plant are located within LMP78 which is located within EL693. The Property includes all mine infrastructure, exploration camps, exploration data and diamond drill core.

The property is well supported by regional infrastructure, and contains all the necessary site infrastructure for mining operations

Underground mining at Kainantu operated from 2004 to 2008 and was based on mining of the Irumafimpa gold deposit. The majority of the mining infrastructure from that period remains in place.

The Kainantu processing plant is located approximately 7 km from the opening of the 800 portal which accesses the Irumafimpa Mine. The plant was on care and maintenance between December 2008 and

September 2016. Simple processing technology was used and following crushing, screening and grinding, sulphide bearing material was separated from non-mineralized host rock by flotation and a gold-rich flotation concentrate sold. Further details of site infrastructure can be found in Section 13 Mineral Processing and Metallurgical Testing and Section 18 Project Infrastructure of this report.

## **6 HISTORY**

Gold was discovered in the area in 1928 in the Kainantu alluvial gold areas, however modern exploration did not commence until the early 1980's. After the discovery of Irumafimpa, Highlands Pacific Limited ('HPL') focused on high grade Au telluride mineralization with little to minor work conducted on the porphyry Cu Au targets. HPL commenced mining operations on the Irumafimpa deposit in 2005.

Barrick purchased the tenement package from HPL in late 2007 and concentrated on increasing resources at Irumafimpa-Kora and discovering economic porphyry Cu-Au mineralization. There has been a significant amount of exploration on the property by various owners. The operation was on care and maintenance between January 2009 and August 2016.

### **6.1 PREVIOUS OWNERSHIP**

EL470 was granted to Renison Goldfield Consolidated (PNG) ('RGC') on 5th July 1982 as PA470. The area of EL693 was granted to RGC as PA462 and held in joint venture between RGC and Kafenu Mining until 1986, when a renewal application was rejected. The area was granted to RGC on 29 December 1986 as EL693.

RGC entered a Joint Venture over the EL's 470 & 693 with Highlands Gold Resources Limited ('HGL') in 1989, with HGL as the Operator. In 1994 RGC withdrew from the joint venture and the tenures became the sole property of HGL. When HGL was restructured in 1996, the new company Highlands Pacific Resources Limited ('HPL') inherited the properties.

The properties were joint ventured between HPL and Greater Pacific Gold NL ('GPG') from 1996 to 1998 with GPG as the Operator. This agreement was succeeded by a joint venture between HPL and Nippon Metals and Mining Company ('Nippon') commencing in 1999, with HPL as the Operator and Nippon as the Funder. Nippon withdrew from the joint venture in late 2000.

In the following years, HPL systematically increased the size of its tenement package with applications granted for tenements in 2001 (EL11277), 2002 (ML150, LMP78, ME80, and ME81), 2004 (EL1341), 2005 (EL1399) and 2006 (EL1400). Barrick purchased the Kainantu tenement package from HPL in December 2007 through its 100% owned subsidiary Placer Dome Oceania Limited. This entity's name was subsequently changed to Barrick Kainantu Limited (now 'K92 Mining Limited') which was the most recent holder of the Kainantu package tenements.

At the time of the purchase by Barrick, the package included seven exploration licences; EL470, EL693, EL1049, EL1277, EL1341, EL1399 and EL1400; one mining licence, ML150; two mining easements, ME80 and ME81; and one licence for mining purposes, LMP78. During its term of operations, Barrick surrendered the EL's 1399, 1400 and 1049; and added two exploration license applications; ELA1898 and ELA1899. These two applications were later dropped in late 2013.

In November 2011, an application for renewal of EL1277 was rejected by the PNG Minister for Mining. Barrick commenced Court action to dispute this decision in Court. No settlement has been reached out of Court, and the status of EL1277 remains subject to negotiation.

The current total area of the tenement package is approximately 405 km<sup>2</sup>.

### **6.2 HISTORICAL EXPLORATION 1928-2012**

Ned Rowlands, an Australian prospector, first discovered gold in the Kainantu area in 1928 on a small creek draining into Abinakenu Creek. Between 1948 and 1952, copper was discovered at Yonki Creek.

The southern end of the Irumafimpa lodes was discovered some time prior to 1967. In 1967, Ken Reihder and Ray Frazer started working Prospect Claim 6 for copper and gold. The workings, known as the Kora mine, produced about 1,000 tonnes of gold and copper ore between 1967 and 1970. The ore processed through a five-head stamp mill is recorded as averaging three ounces recovered gold to the tonne. Between 1969 and 1972, most reconnaissance work concentrated on the Yonki copper gold lode, which lies south of Abinakenu Creek.

Prospecting Authority (PA) 693 was initially granted to RGC (PNG) Pty Ltd on 24th December 1986 and renewed for a further two-year period on 29th December 1988. In July 1989, Highlands Gold Resources N.L. (HGL) entered into a joint venture agreement with RGC to earn a 50% interest in EL693. Expenditure commitments were fulfilled and HGL assumed its share of the ownership in 1994.

Highlands Gold actively explored the Kainantu properties from 1989 to 1994. Their initial work consisted of mapping, sampling and trenching. The work delineated several high grade gold targets including Irumafimpa, Maniape and Arakompa. Exploration was focused on Irumafimpa where six diamond drillholes were drilled (for a total of 1,402m) during the last quarter of 1992. These drillholes returned some very encouraging gold results. To follow up on these, further extensive trenching, mapping and sampling was conducted. During the last half of 1993 a geophysics program comprising magnetics, CSAMT and IP was implemented, and a further 15 diamond drillholes (for a total of 3597.3m) were completed.

In 1996, Highlands Gold was taken over by Placer. In June of that year, Placer floated the exploration assets of Highlands Gold off into a new company called Highlands Pacific. The Kainantu tenements became part of the core assets of Highlands Pacific. That same year Highlands Pacific joint ventured the property to a junior exploration company, Greater Pacific Ltd. and this company became operator and manager of the project. Greater Pacific however struggled to make any exploration progress on the property, due to landowner difficulties and funding shortfalls. By the end of 1998 it became obvious that Greater Pacific would be unable to meet their joint venture obligations. At that time Highlands Pacific staff reviewed all of the previous exploration conducted within the Kainantu district. This review indicated a very high potential for discovery of a significant tonnage of high-grade gold mineralization within the Irumafimpa, Maniape and Arakompa vein systems. A follow up work program, to be managed by HPL, was proposed.

The joint venture with Greater Pacific was terminated early in 1999, and subsequently a joint venture with Nippon Metals and Mining Company was ratified. Under the terms of this agreement, Nippon was to sole fund the initial stages of exploration whilst HPL manage the exploration programs. In 1999 the Nippon-Highlands joint venture drilled 14 holes in the Irumafimpa area with reasonable success. The following year the venture drilled another 12 holes to further define the Irumafimpa resource. Nippon withdrew from the joint venture in late 2000 and Highlands Pacific subsequently regained 100% of the project.

Local people started mining zones of the Irumafimpa zone in 1992 after the discovery of the outcrop by Highlands Gold. Surface mining at all of the three mineralized structures continues today, and provides a major source of income for the local people.

Modern development of the Irumafimpa deposit commenced in 2004, and the mine struggled to achieve planned mined grades, through a combination of complexity of geology and unplanned dilution. Continued shortfalls in metal production pushed Highlands Pacific to consider a sale of the assets, which were acquired by Barrick Gold in December 2007.

Barrick conducted exploration from 2008 to August 2012. In addition to resource evaluation of the Kora deposit their priority was discovery of a large porphyry system. Land access issues were the main challenge to implementing exploration activities. Access to the high priority A1 project was only available for the 6 months before exploration was halted by the decision to divest the project.

Figure 10 shows the location of the prospects described below in relation to property boundaries.

### 6.3 ML150 (IRUMAFIMPA, KORA, JUDD)

#### 6.3.1 Irumafimpa-Kora

A total of 24 diamond holes were drilled by Barrick at Kora, including a single hole at the nearby Karempe vein system (Figure 3). Drilling confirmed the continuity of the Kora Lode and confirmed that the overall system has a vertical extent to >800m. Significant intercepts are summarised in Table 3.

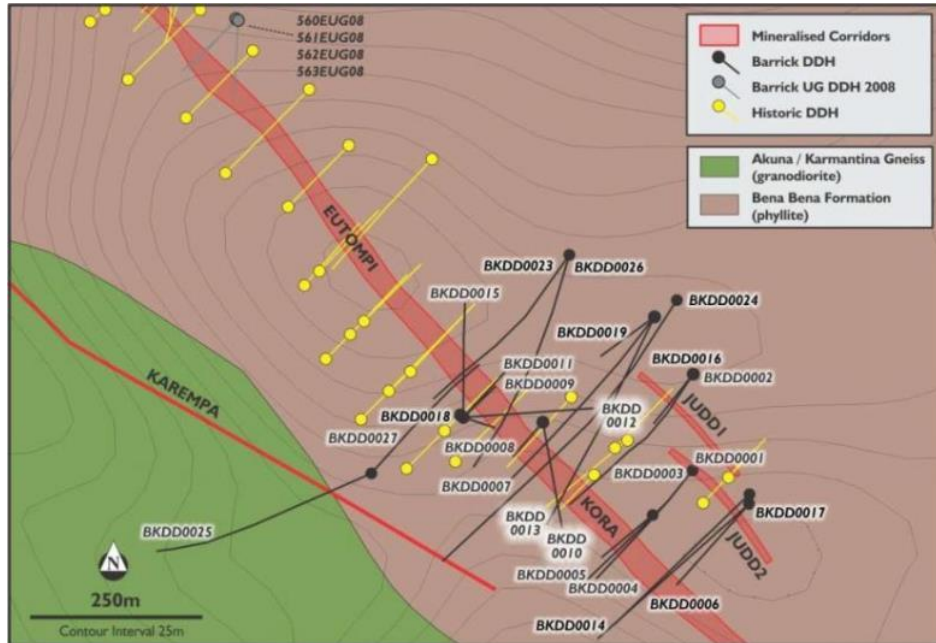


Figure 3. Local geology and Barrick drillholes location plan at Kora and Karempe.

Source Barrick 2014

Prospect location in relation to property boundaries is shown in Figure 10

Table 3. Significant intercepts, Barrick drilling (> 1 g/t Au) at Kora.

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Cu (%)	Metal Accumulation. Factor (gm)
BKDD0001	279	282	3	5.16	8.37	15.48
BKDD0001	299	303	4	6.3	8.04	25.20
BKDD0002	113.3	116.3	3	347.73	0.21	1043.19
BKDD0005	138.1	146	7.9	20.14	6.74	159.11
BKDD0005	156	159	3	8.33	7.96	24.99
BKDD0005	173	182.7	9.7	4.64	0.53	45.01
BKDD0006	575.2	581	5.8	6.76	7.94	39.21
BKDD0007	515.15	522.51	7.36	22.78	2.22	167.66
BKDD0008	87.5	89.5	2	53.36	4.8	106.72
BKDD0008	123.38	130	6.62	9.57	0.44	63.35
BKDD0009	218.87	221.36	2.49	207.09	3.04	515.65
BKDD0009	225.6	231.4	5.8	25.05	2.25	145.29
BKDD0010	104.8	107	2.2	101.7	15.07	223.74
BKDD0011	38	47	9	19.17	1.08	172.53
BKDD0013	488	492	4	228.91	0.45	915.64
BKDD0015	62.4	73	10.6	184.78	1.85	1958.67
BKDD0023	945	951.4	6.4	5.55	0.46	35.52

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Cu (%)	Metal Accumulation. Factor (gm)
BKDD0024	619	624	5	12.94	3.54	64.70
BKDD0026	582.9	593	10.1	8.21	0.97	82.92
BKDD0027	472	480	8	11.97	0.82	95.76

A review of >100g/t Au and >10% Cu intersections showed greater continuity of high grade at Kora when compared to Irumafimpa (Figure 4; Figure 5). In addition, veins are wider and likely more continuous than those at Irumafimpa. Mineralization is open in all directions.

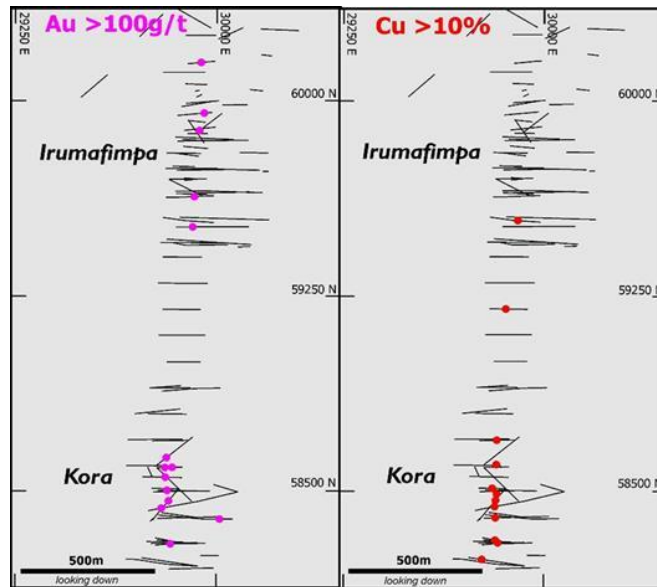


Figure 4. Surface drilling traces showing surface projections of >100g/t Au and >10% Cu.

Source Barrick 2014

Prospect location in relation to property boundaries is shown in Figure 10

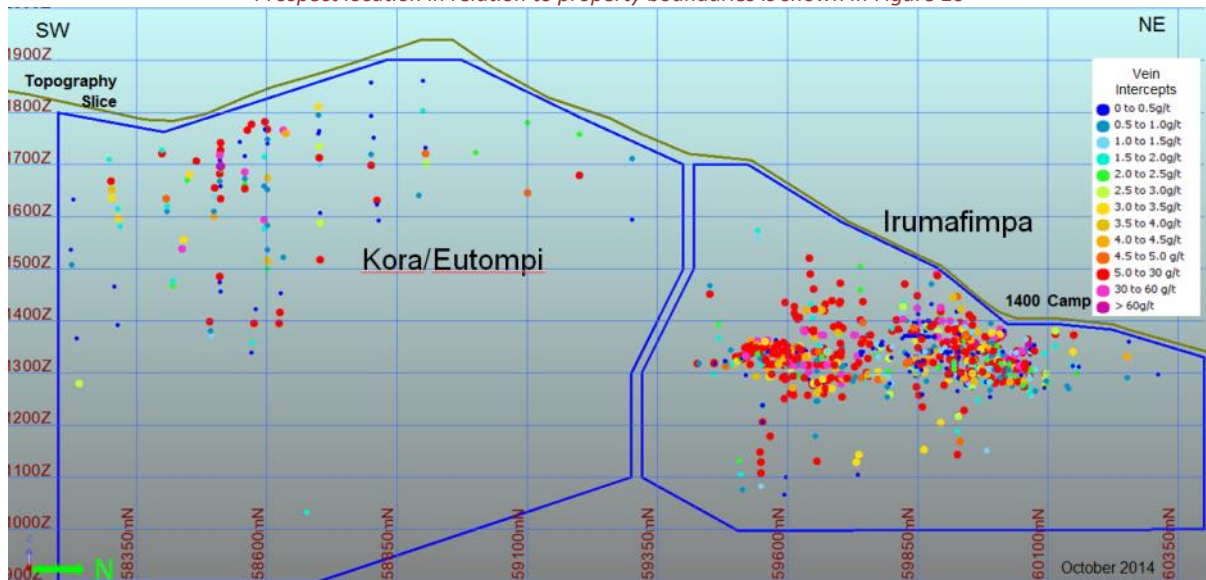


Figure 5. Long section view of Kainantu Resource Areas with Vein Composites colour coded for Au Eq

Source Nolidan 2014

### 6.3.2 Judd

Judd, a narrow intermediate vein system located 200m east of and parallel to Kora was partially tested by Barrick holes designed to test the Kora lode at depth. This drilling on the Judd lode returned several



highly encouraging intersections of the Judd lode including 1m @ 4.1 g/t Au, 9m @ 8.8 g/t Au and 1.1% Cu and 3m @ 278 g/t Au. Barrick considered that holes designed to specifically target the Judd lode would have the potential to yield high grade resources within close proximity to the immediate mine environment.

#### **6.4 HISTORICAL EXPLORATION REVIEWS**

Barrick engaged independent consultants Corbett (2009) and Tosdale (2012) to carry out exploration targeting reviews for the Kainantu project. A summary of Corbett's findings is included below as it represents an independent assessment of the potential of the Kainantu property. Barrick also conducted several internal reviews of the exploration prospectivity.

Corbett made recommendations for existing exploration targets and highlighted that many areas of interest had received little follow up. He concluded that the Irumafimpa structure hosts low sulphidation quartz-sulphide Au + Cu mineralization typical of that which might form marginal to porphyry Cu-Au intrusions. Continued data analysis was suggested to seek to identify any link structures, which may form steep plunging shoots under conditions of strike-slip deformation. A possible porphyry Cu-Au at the fluid upflow was also recognised as a target. The Bilimoia target lies SW of the original Timpa Cu-Au breccia in the vicinity of a Barrick Mo in soil anomaly and represents the SE strike extension of the Kora vein. It should be targeted as a possible intrusion-related upflow for the Kora-Irumafimpa low sulphidation deep epithermal Cu-Au vein mineralization.

#### **6.5 HISTORICAL RESOURCE ESTIMATES IRUMAFIMPA-KORA**

Several historical estimates for the Irumafimpa and Kora deposits were previously prepared before K92 entered into an agreement to acquire an interest in the property that contains the deposit.

Early HPL resources reported in accordance with JORC 2004 were prepared by independent consultants Hackchester Pty Ltd (2005) and Mining Associates Pty Ltd (2006). Numerous historical estimates and financial models were prepared by Barrick for Irumafimpa-Kora. K92 is not treating the historical estimates as current mineral resources or mineral reserves. These historic resources are not reported here as they have been superseded by the current Mineral Resource estimate for the Irumafimpa and Kora deposits which was reported in detail in Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 02 March 2017. The estimates are summarised below in Section 6.6 of this report.

#### **6.6 IRUMAFIMPA-KORA 2017 RESOURCE ESTIMATE**

The mineral resource estimate reported in "Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 02 March 2017" used the same resource block model generated in November 2014 and reported in the NI 43-101 reports by Nolidan dated 01 May 2015 and 15 April 2016.

Rock density values used for this resource estimate were revised to reflect new information. Gold equivalents were adjusted to reflect the current metal values.

The resource estimate was completed based on the historical surface and underground drilling conducted by previous owners, Barrick and HPL. Face channel and grade control samples collected during previous mining operations were also used but have only a local influence.

### 6.6.1 Geologic Interpretation

The Irumafimpa-Eutompi-Kora vein system is a 3km long, 300m wide, northwest trending continuous lode structure with veins across three distinct mineralizing events. The Kora deposit consists of a series of sub-parallel, north-south striking veins. From west to east these veins are called K3, K2, K5, K1 and, E4. Further to the east are the J4, J3, J2 and J1 veins. The two figures below (Figure 6; Figure 7) show a typical arrangement of the veins at Kora in plan view and cross section.

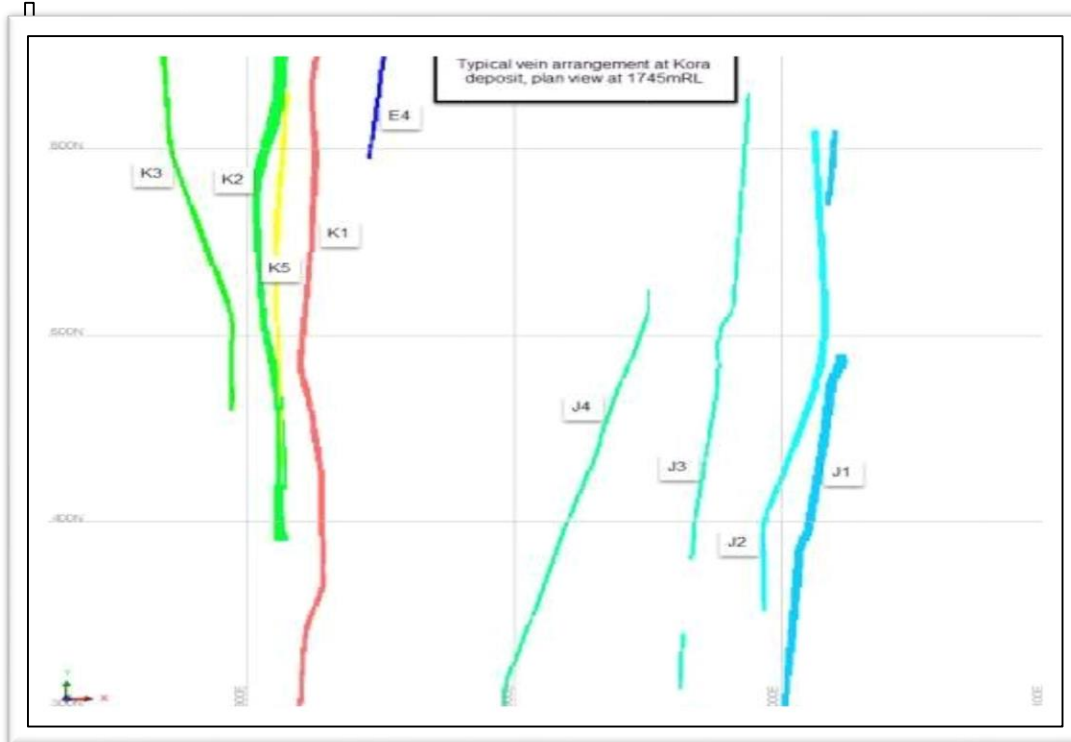


Figure 6. Vein arrangement at Kora, plan view at 1745mRL

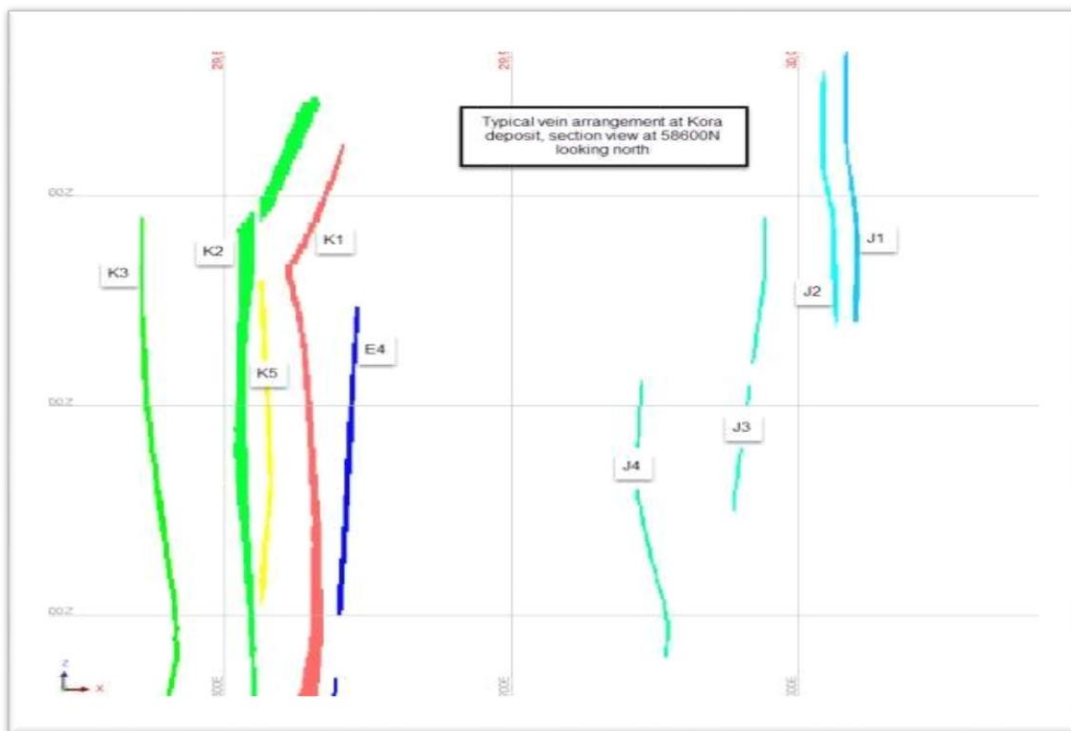


Figure 7. Vein arrangement at Kora, section view at 58600N, looking north

### 6.6.2 Drillhole Spacing

At Kora, from surface to about 300-500m below surface, there is an average spacing between drillhole intercepts at Irumafimpa-Kora of about 50-70m. Vein intersections below this depth are sparser.

Irumafimpa is much more densely sampled because of underground development. Spacing between vein intercepts is on the order of 20-50 m. Kora veins were found to have relatively higher copper and silver grades and lower tellurium and sulphur grades than Irumafimpa veins, suggesting that they are part of a different phase of mineralization. In addition to this, grades at Eutompi were too low to allow interpretation of any vein mineralization from Kora to Irumafimpa.

Kora and Irumafimpa veins remain separate domains in this resource. It was concluded that there has been insufficient drilling to confirm or disprove whether the “IJ” (Irumafimpa Judd) and “J” (Judd) veins are continuous between prospects.

### 6.6.3 Resource Classification

Resources were not reported at confidence levels above Indicated due to the drill spacing at Kora and limited confidence in underground sampling information from Irumafimpa.

Factors that could potentially impact on the materiality of the mineral resource estimate were detailed in Section 14.15 of “Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 02 March 2017” which is filed on SEDAR. These included:

The mineral resource is based on historical information generated by HPL and Barrick.

Insufficient density measurements. A total of 428 measurements for Kora were reported by Barrick but most of these measurements were of waste not vein material. Densities reported by HPL for Irumafimpa were slightly higher but based on only 35 measurements.

Potential underestimation or overestimation of gold grade due to poor core recovery in mineralized zones.

The vein systems are structurally complex and this complexity may lead to problems with correct interpretation of vein continuity.

### 6.6.4 Irumafimpa and Kora Mineral Resource Estimate Statement – March 2017

Mineral Resources for the two deposits were classified in accordance with NI43-101 as Indicated and Inferred confidence categories on a spatial, areal and zone basis and are listed in Table 4.

Table 4. ML150 Resources by Deposit and Category

Deposit	Resource Category	Resource by Deposit and Category								
		Tonnes	Gold		Silver		Copper		Gold Equivalent	
			Mt	g/t	MOz	g/t	MOz	%	Mlb	g/t
Irumafimpa	Indicated	0.56	12.8	0.23	9	0.16	0.28	37	13.4	0.24
	Inferred	0.53	10.9	0.19	9	0.16	0.27	74	11.5	0.20
Kora/Eutompi	Inferred	4.36	7.3	1.02	35	4.9	2.23	215	11.2	1.57
<b>Total Indicated</b>		0.56	12.8	0.23	9	0.16	0.3	4	13.4	0.24
<b>Total Inferred</b>		4.89	7.7	1.21	32	5.06	2.0	218	11.2	1.76

M in Table is millions. Reported tonnage and grade figures have been rounded from raw estimates to reflect the order of accuracy of the estimate. Minor variations may occur during the addition of rounded numbers. Gold equivalents are calculated as  $AuEq = Au\ g/t + Cu\% * 1.52 + Ag\ g/t * 0.0141$ .

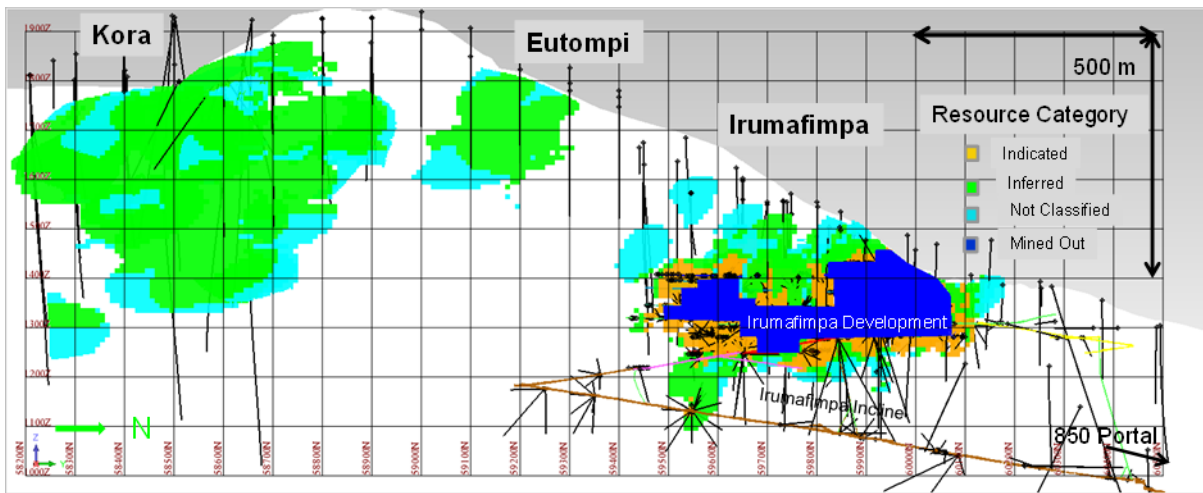


Figure 8: ML150 Long Section with blocks coloured by resource category (looking west)

Source: Nolidan 2017

#### 6.6.5 Notes to accompany March 2017 resource statement:

- The current sample exploration database was supplied by Barrick in MS Access format.
- Estimation undertaken in Surpac™, using ordinary kriging (“OK”) in unfolded space.
- The estimation block size was 10m in Y and 10m in Z with width estimated in unfolded space as a variable. Grade was interpolated by domain using OK estimation with parameters based on directional variography by domain. Thickness of the vein was also estimated by OK estimation.
- Results validated against drill data and Inverse Distance Squared, Nearest Neighbour, Gram M Accumulation estimates and Ordinary Krige uncapped estimates.
- Minimum mining width of 1.2 m horizontal. Grade was diluted to account for minimum width.
- This mineral resource estimate is based on 78,935 metres of drilling from 767 holes, and 18,312 metres of assayed intervals across all lodes. A single vein composite was used for each drill intercept on each lode – cut-off for selection was 3 m-gms Au Equivalent. There are a total of 2,003 vein composites across 19 veins, including 349 face composites.
- A mined out area representing the extent of current mining projected across all lodes were removed from the final model as the exact location of individual stopes is not clear.
- Top caps were applied to the composites for each vein. Grade caps were selected to restrict the influence of outliers where drilling was sparse, and varied by vein.
- A minimum of 2 samples and maximum of 12 samples were used for each block. Search distances varied by lode and reflect the variogram ranges of 100-200 m, maximum projection beyond last drill-hole is 50 m.
- The volume for each vein was defined by a wireframe in 3D space and is used to constrain the resource blocks.
- Lower cut-off grades for reporting were a combination of thickness and grade reflecting potential mining methods, metallurgical recovery, and royalties. Lower cut-off grades of 5g/t AuEq for wide veins (> 3m width) and 6g/t AuEq for veins between 1.2m and 3m width were used.
- Resource categories are based on estimation confidence and number of informing samples as a guide. Resource categories are based on estimation confidence and number of informing samples as a guide. Blocks with only one sample supporting them are not included in the resource estimate and are considered Unclassified.

- Vein blocks in the Irumafimpa deposit have been assigned a density of 2.9 t/m<sup>3</sup> and vein blocks in the Kora deposit have been assigned a density of 2.8 t/m<sup>3</sup>

Sampling procedures and analytical techniques for all HPL and Barrick drillhole and grade control sampling were reported in Section 11 of the Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 02 March 2017 which is filed on SEDAR.

## 6.7 HISTORIC PRODUCTION

Table 5 shows mill production for the life of the mine from 2006 to its closure in 2009 and since re-opening in 2016 to date. On a qualitative basis a negative reconciliation on grade from grade control to mill production is evident. The grade control grades were of the order of 8 to 9 g/t Au whereas the back calculated mill head grade for 2008 was 5 g/t Au.

Table 5. Mill Production 2006 to 2018

Year	Mill tonnes	Head grade Au g/t	Contained Oz Au
2006*	104,272	8.00	26,819
2007*	141,452	7.00	31,835
2008**(6 months)	61,532	5.02	9,939
<b>LOM Total</b>	<b>307,256</b>	<b>6.94</b>	<b>68,593</b>
* From Highlands Pacific annual reports			
** Barrick Ownership (mining and processing ceased in December 2008)			
Year	Mill tonnes	Head grade Au g/t	Contained Oz Au
2016***	633	3.41	69
2017***	61,932	4.47	8,900
2018 (10 months) ****	63,205	19.6	39,829
*** K92 Restart, rehabilitation, refurbishment & commissioning from March 2016			
**** K92 Commercial Production from Feb 2018			

K92 restarted mining operations in the Irumafimpa mining area. In 2018 mining shifted to the Kora North where YTD process recoveries at the end of October were 94% and 93% for Au and Cu respectively.

## 6.8 HISTORICAL PERFORMANCE AND RECONCILIATION REVIEWS

The operations at Irumafimpa-Kora were suspended in December 2008. A general timeline of the operations is shown in Table 6. There were several historical reviews into the poor performance of operations with recommendations for improvements.

Table 6. Summary operations timeline for the Project

From	To	Mine Operations History (ML150)
January 2004		Highlands Pacific DFS approved by Mineral Resources Authority
2005	October 2007	Kainantu Gold Mine operated as Highlands Kainantu Limited (HKL)
November 2007		Barrick purchased the Kainantu project.
January 2008	June 2008	Barrick suspended mining operations from January to June 2008 in order to improve safety in line with Barrick standards. Technical aspects of operation also reviewed and implementation of some changes commenced

From	To	Mine Operations History (ML150)
July 2008	December 2008	Mining restarted in July 2008 and was halted permanently in December 2008.
January 2009	December 2009	Exploration of epithermal and sulphide veins continued on the ML until June 2009, and then halted due to review of exploration priorities.
January 2010	December 2014	Project on Care and Maintenance, limited exploration on EL's. K92PNG acquired K92ML from Barrick (Niugini) Limited pursuant to an agreement dated June 11, 2014 which closed March 6, 2015
January 2015	January 2018	Mining Lease granted, Re-start operations with rehabilitation of mine, refurbishment and re-commissioning of Processing plant.
February 2018	Current	K92 declare commercial production at Kainantu mine and production focus on Kora North area

## 7 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 REGIONAL GEOLOGY

The Kainantu property is located within the New Guinea Thrust Belt, close to its northern contact with the Finisterre Terrane (Figure 9). The contact is marked by the northwest trending Ramu-Markham Fault, a major suture zone that marks the northern margin of the Australian Craton. The New Guinea Thrust Belt records an early Miocene or older ductile, tight folding event that was followed by middle Miocene intrusions. Late Miocene regional scale low-angle thrust faulting followed, associated with the collision of the Finisterre Terrane. The belt is characterised by a number of north-northeast trending fault zones that commonly host major ore deposits.

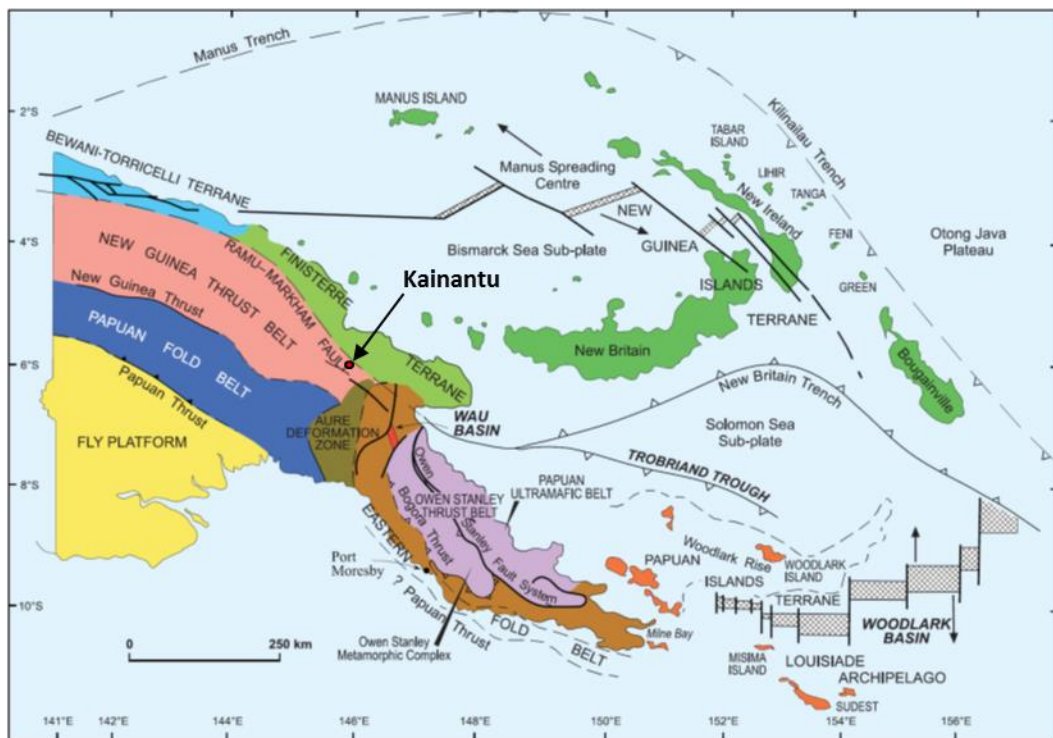


Figure 9. Tectonic Framework of Papua New Guinea, Showing Location of Kainantu Property.

Source Williamson & Hancock 2005

## 7.2 PROPERTY GEOLOGY

The Kainantu area is underlain by rocks of the Early Miocene Bena Bena Formation, comprising pelite, psammite, conglomerate and marl beds metamorphosed to greenschist to amphibolite grade. These are unconformably overlain by Miocene age Omaura Formation consisting of volcano-lithic sandstones and siltstones and numerous fossiliferous limestone lenses. The overlying Yaveufa Formation consists of basaltic and andesitic flows, agglomerates, volcanoclastic sandstone and limestone (Tingey and Grainger, 1976). The mid-Miocene Akuna Intrusive Complex consists of multiple phases ranging from olivine gabbros, dolerites, hornblende gabbros and biotite diorites to granodiorites. Late Miocene age Elandora Porphyry dykes form small high level crowded feldspar porphyry dykes and diatreme breccias associated with mineralization (Table 7). A north-northeast trending transfer structure transects the area, with associated mineralization, alteration and porphyry complexes aligned along it. Local deformation history as documented in the Irumafimpa-Kora mine area is shown in Table 8.

**Table 7. Summary of main regional rock units identified within Kainantu area.**

Age	Rock Units
Recent Quaternary	Kainantu Formation – basal fluvial conglomerate, sandstone and mudstone overlain by well bedded tephra.
~~~ Unconformity ~~~	
Late Miocene	Elandora Porphyry – intermediate dykes sills and stocks.
Early Miocene	Akuna Intrusive Complex – range in composition from olivine gabbros through to granodiorites.
Early Miocene – Mid Miocene	Yaveufa Formation - basaltic and andesitic agglomerates, lithic tuffs, volcanoclastic sandstone and limestone.
Late Oligocene – Late Miocene	Omaura Formation – thin bedded to laminated calcareous siltstone and mudstone.
~~~ Unconformity ~~~	
Early Mesozoic	Bena Bena Formation - pelite, psammite, conglomerate and marl metamorphosed to schist and phyllite.

**Table 8. Local deformation history for the Kainantu area.**

Source Blenkinsop 2005

Deformation history		
Event	Structures	Interpretations
D4	Chinook	Joint: open due to in situ stress orientation
D3	Faults with gouge	N-S shortening: faults along S1
	Mill lode style mineralization	Extension on Mill Lode: Reactivation of S1
D2	Crenulations: $L_1^2$ lineation, S2	NNE shortening
D1b	Shear zone network	Localisation into zones of intense deformation
D1aq	Main cleavage - S1 L1 lineation = $L_1^0$	N-NE shortening

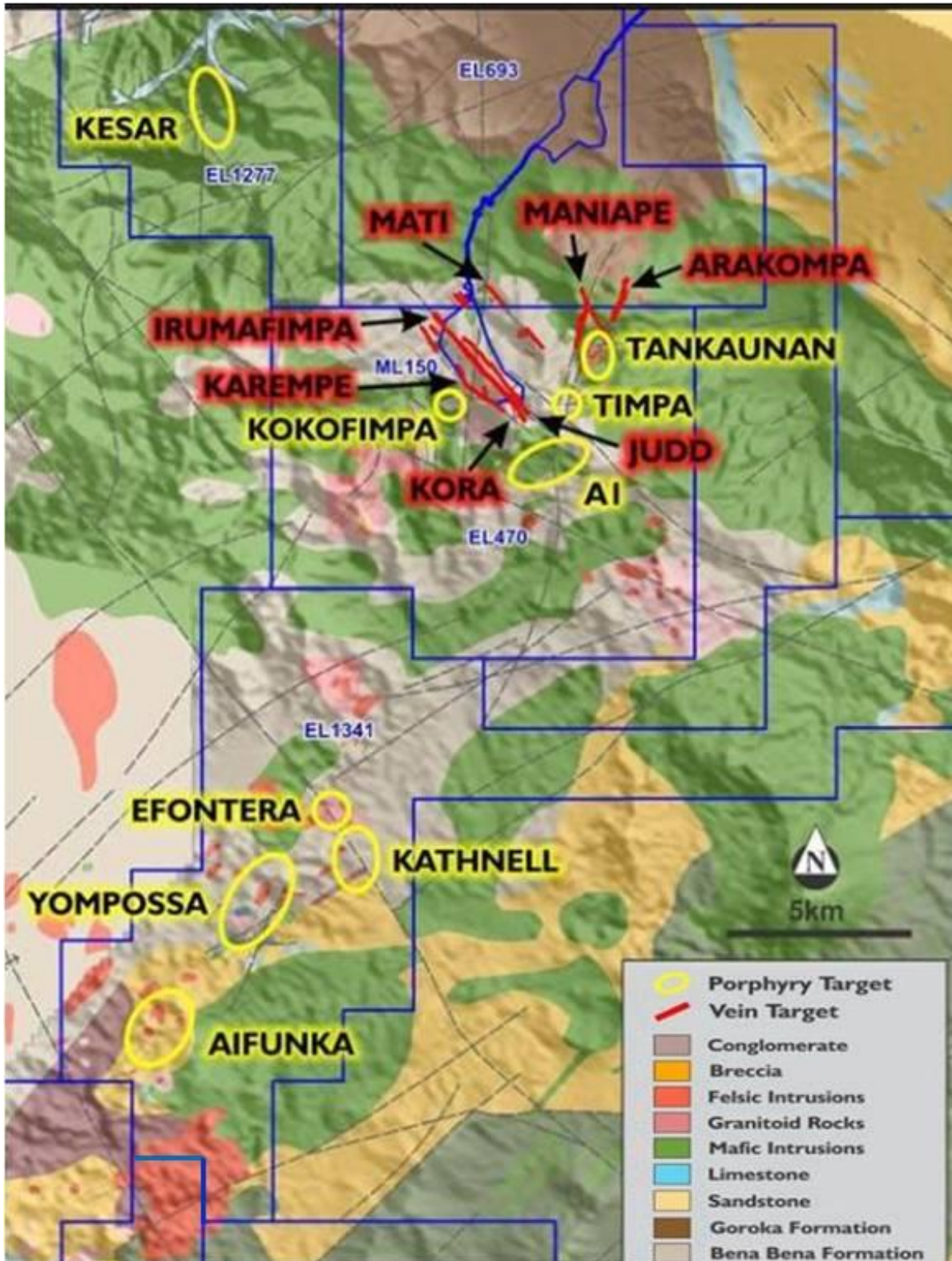


Figure 10. Kainantu property geology and known vein and porphyry deposits and prospects.  
 The prospects are summarised in Table 9.(Source K92 2018)

### 7.3 MINERALIZATION OVERVIEW

The descriptions in this section have been sourced from the summary provided in Barrick (2014).



Mineralization on the property includes gold, silver and copper occurring in epithermal Au telluride veins and Au Cu Ag sulphide veins of Intrusion Related Gold Copper (“IRGC”) affinity and also less explored porphyry Cu Au systems; and alluvial gold.

The Irumafimpa-Kora (including Eutompi and Kora North) vein deposit is the most advanced project at Kainantu with current defined resources and past modern mining activity in the Irumafimpa area. The deposit occurs in the centre of a large mineralized system approximately 5km x 5km in area that has been partly delineated by drilling and comprises several individual zones of IRGC and porphyry style mineralization. Peripherally exploration activities have identified further areas of vein and porphyry-style mineralization.

Other less advanced prospects on the property include epithermal Au veins similar to Irumafimpa, IRGC veins similar to Kora, porphyry Cu Au systems, skarn Cu, Pb and Zn mineralization and alluvial gold. A summary of the mineralization style, host rocks and dimensions and continuity for the Irumafimpa-Kora vein deposit and the other vein and porphyry prospects in the Kainantu Project is shown in Table 9 and described further below.

The location of the deposits and prospects in relation to the property boundaries is shown in Figure 10.

**Table 9. Summary of mineralization, host rocks, dimensions and continuity for main Kainantu deposits and prospects**

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
Irumafimpa-Kora (including Eutompi and Kora North))	Vein Low sulphidation Au-Cu (described in Section 7.4) (Resources reported in Sections 6.6 and 14)	Quartz veins in chlorite-sericite schist.	>2.5 km strike x 60 m wide System is open along strike and at depth	Drilling shows strike and depth continuity at a gross scale. Gold mineralization is discontinuous.
Judd	Vein Low sulphidation Au-Cu (Barrick drilling returned 3m @ 278g/t Au)	Quartz veins in chlorite-sericite schist.	2.5km strike x 1-4m wide Vein system as defined by surface mapping and sampling and sporadic drilling. Mineralization open along strike and to depth	Surface continuity along strike unknown due to poor outcrop exposure
Karempe	Vein Epithermal Au (rock chip average grades of 6.7 g/t Au, 16.8 g/t Au, 45.2 g/t Au and 50.8 g/t Au; )	Quartz veins in granodiorite and chlorite-sericite schist.	3km strike and 1-2m wide vein as defined by surface mapping and sampling. Mineralization open along strike and to depth	Discontinuous vein outcrops and no drilling
Arakompa	Vein Epithermal Au	Quartz veins in Akuna Diorite	3km strike and 1-2m wide vein system NNE trending No deep drilling.	Surface continuity along strike unknown due to poor outcrop exposure
Maniape	Vein Epithermal Au	Bena Bena Metamorphics, Akuna Diorite,	Strike length 1km Near surface zone of mineralization of 700m strike x 34m wide x 125m depth defined by surface sampling and diamond drilling	Continuity of near surface mineralization confirmed by drilling

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
Mati / Mesoan	Vein Epithermal Au (Rock chips average of 28g/t Au and a maximum of 131g/t Au)	Bena Bena Metamorphics, Akuna Diorite,	1 km strike mineralized zone defined No drilling	Surface continuity along strike unknown due to poor outcrop exposure No drilling
Kesar (reconnaissance stage)	Vein and Porphyry Au and Cu Vein rock chip grades up to 30g/t Au. Porphyry copper grades up to 0.5% Cu. Quartz-sulphide veins with pyrite ± chalcopyrite ± galena ± sphalerite ± molybdenite ± covellite also identified	Quartz veins. Dacitic porphyry dykes with potassic alteration contain Cu mineralization.	Undefined	Undefined
A1 (reconnaissance stage)	High-sulphidation and porphyry Cu-Au Brecciated vuggy silica-pyrite-enargite mineralization and anomalous molybdenum in soils Historic float sample of massive enargite-pyrite returned 16.6% Cu and 12g/t Au.	Bena Bena Metamorphics, Akuna Diorite, Feldspar porphyry and breccias	Undefined	Undefined
Kokofimpa	Porphyry Cu-Au	Akuna Intrusive Complex and Elandora porphyry intrusions within the Bena Bena Metamorphics	3 km x 3 km Defined porphyry system with multiple magmatic phases with minimal drilling in center of prospect.	Undefined
Tankaunan	Porphyry Cu-Au	Akuna Intrusive Complex and mid-late Miocene Elandora Porphyry intrusions within Bena Bena Metamorphics	Extent of systems needs to be defined by first pass 400x400m drilling.	Undefined
Timpa	Porphyry potential postulated Cu-Au-As in Soils Advanced argillic alteration Quartz Breccia (monomict, quartz cemented, with shallow quartz infill textures; soil sampling shows the breccia is anomalous in Au, As, Bi, Sb, W)	Bena Bena Metamorphics and breccia	Quartz breccia is 500 m by 100 m. Other mineralization Undefined	Undefined

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
Aifunka	Skarn (Porphyry-related) Cu and Au (Barda reefs)	Mineralization is hosted in calc-silicate bands spatially associated with the brecciated porphyry dyke contacts. Underlain by the Omaura Sediments and Akuna Intrusive Complex with Elandora Porphyry.	Undefined	Undefined
Yompossa	Porphyry Cu-Au (60m @ 0.3% Cu and 0.1g/t Au from 105m in BHP01)	Underlain by Bena Bena Formation and Omaura Formation. Contains feldspar porphyry intrusions interpreted to be associated with Elandora Porphyry	Anomaly is 500m x 600m and is open to the NE. Potential for mineralization below historic drilling.	Undefined
Kathnel	Base metal epithermal veins (Pb-Zn-Cu-Au)	-	Undefined	Undefined
Efontera	Porphyry Cu-Au	-	Undefined	Undefined

#### 7.4 IRUMAFIMPA-KORA VEIN SYSTEM

The Irumafimpa-Kora vein system (comprising the Kora, Eutompi, Kora North and Irumafimpa prospects) is interpreted to contain two stages of mineralization (Corbett, 2009). The earliest is a sulphide-rich Cu-dominant stage. This is overprinted by a quartz-rich Au-dominant crustiform quartz vein to breccia system with high grade gold associated with tellurides (e.g. Calaverite AuTe). The alteration and mineralization paragenesis recognised in the Irumafimpa-Kora vein system is summarised below in Table 10.

**Table 10. Mineralization and alteration paragenesis in the Irumafimpa-Kora vein system.**

Stage	Name	Description
Stage 1.	Silicification and fuchsite alteration	silica, fuchsite
Stage 2.	Sulphide-rich Cu-dominant	quartz, pyrite, chalcopyrite, bornite
Stage 3.	Quartz-rich Au-dominant	quartz, gold tellurides (calaverite and kostivite), native gold
Stage 4.	Quartz Cu	quartz, pyrite, chalcopyrite, bornite

Stage 1 is the earliest period of alteration and is characterised by silicification and fuchsite alteration of phyllitic wall rock.

Stage 2 mineralization comprises coarse-grained idiomorphic quartz and pyrite (typically euhedral) veins with base metals. Volumetrically this early mineralization appears to be the most abundant mineralization. At Kora and Kora North the mineralization comprises massive pyrite veins to pyritic

breccias, grading to pyrite-chalcopyrite-bornite veins characterised by elevated Zn, Pb, Sn, W, Bi, and Sb. High copper grades (average 2.2 % Cu) occur at Kora. There appears to be a lateral zonation northward to lower copper grades at Irumafimpa.

Stage 3 mineralization is the dominant gold-bearing stage and is characterised by crustiform, vughy and colloform quartz veins, quartz breccias, and xenomorphic pyrite. Most of the gold occurs as the gold tellurides calaverite and kostivite, which are concentrated at vein margins. Significant native gold has been locally observed and is probably a result of oxidation of tellurides at Irumafimpa, and as primary native gold at Kora and Kora North.

Stage 4 is manifested as local brecciation and deposition of low temperature quartz along with minor copper mineralization (Figure 11).

At Irumafimpa, the abundant essentially barren mineralization (quartz and sulphide) is highly visible and voluminous whereas gold mineralization is more cryptic and occupies a minor volume within the earlier mineralization stages.

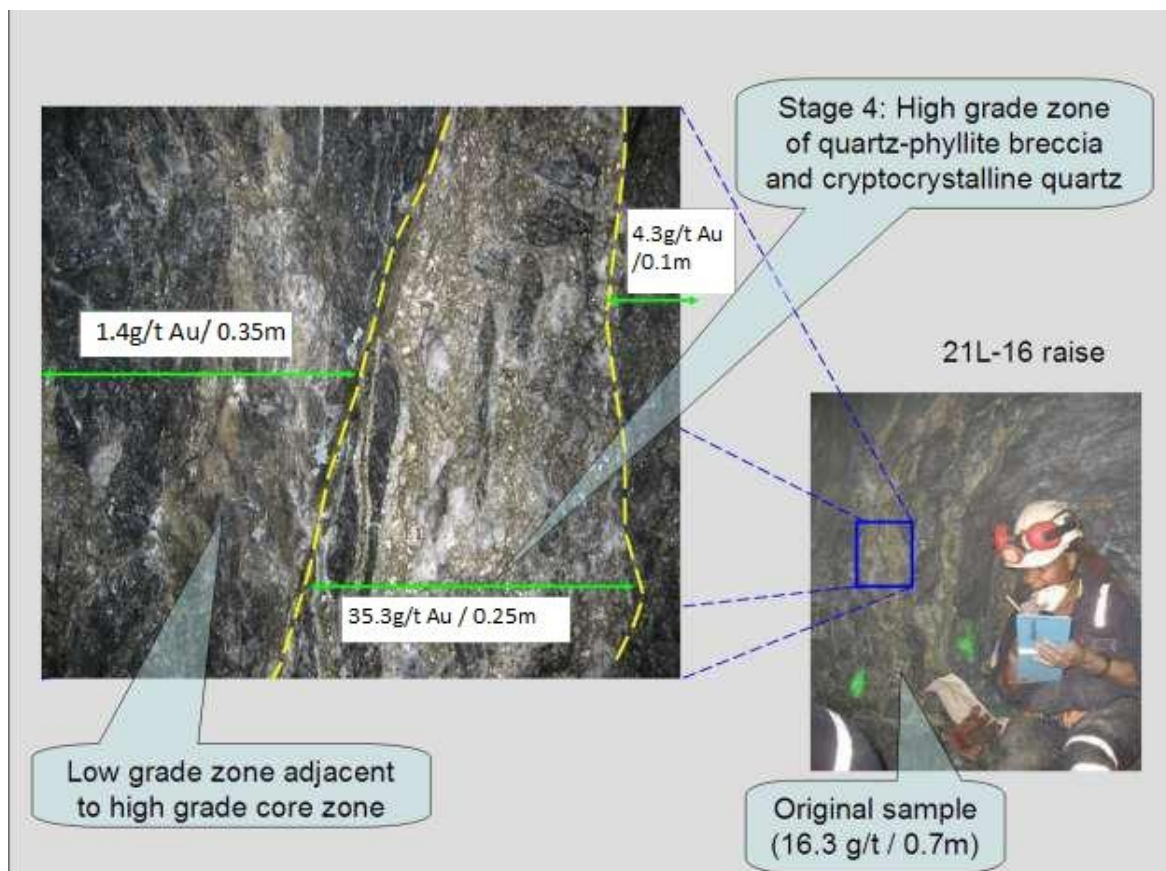


Figure 11. Diagram illustrating grade distribution within an original 0.7m sample.

Source Smith and Thomas 2008

#### 7.4.1 Host rocks

Dominant host rock is highly sheared and deformed Bena Bena Formation low grade metamorphics intruded by Elandora porphyry at the northern end of the vein system.

#### 7.4.2 Controls

The structural history of the Irumafimpa-Kora area has been documented by Blenkinsop (2005). The Irumafimpa-Kora vein system follows the main NW shear zones of the contiguous Irumafimpa, Kora North and Kora structures. Veins are breccia veins with abundant clasts of both altered wall rock and

earlier stages of vein mineralization. Vein formation was multistage, with at least four identifiable episodes of alteration and mineralization (Table 10).

At Kora and Kora North both the sulphide-rich Cu-dominant and quartz-rich Au-dominant mineralization occur along the same NW trending sub-vertical structure. This is likely a long lived structure, which was reactivated at several different stages. The quartz-rich Au-dominant mineralization shows variations in dip (from sub-vertical to locally -60° dip) and strike, which define larger high grade shoots.

Late stage faults with gouge postdate the mineralization (Table 8). These usually occur on the vein margins but can cause local disruption of the veins.

#### **7.4.3 Dimensions and Continuity**

The current resources occupy a broad northwest trending mineralized zone more than 2.5 km long and up to 60m wide in which individual veins vary from less than one metre wide that pinch and swell over short distances (Au telluride lodes) to more continuous veins up to several metres wide (Au Cu Ag sulphide lodes).

Historical exploration has identified and subdivided several shoots within the lodes, defining the Kora, Kora North, Eutompi and Irumafimpa Prospects. The vertical extent in outcrop is also significant, with Kora identified for at least 200m vertical extent (1750-1950m RL) and Irumafimpa outcropping at 1300m RL.

At Kora, drilling has confirmed that the overall system has a vertical extent greater than 800m. Mineralization is open in all directions. Wider mineralized zones (up to 6m) contain multiple high grade veins which may be splays. The Kora veins average 3.1m true width; which is the entire extent of the known veins before cut-off grades are applied. The Kora veins range from 1.6m (Kora No. 3 vein) up to 4.2m true width (Kora No. 1 vein). The Mill veins at Irumafimpa average 1.2m true width, which was the minimum width used during resource estimation.

Eutompi is the area of mineralized lode between Kora and Irumafimpa, extending from around 58,900mN to 59,400mN. Limited drilling has been conducted in this region and only at high levels. Drill density is insufficient to generate a constrained resource. The drilling indicates this area may be more structurally complex than at other locations, but has confirmed that the intermediate and low sulphidation styles of mineralization continue throughout. Results include 25m @ 2.0 g/t Au, 4.2% Cu, 88 g/t Ag (including 1m @ 22.6 g/t Au, 17% Cu, 1000 g/t Ag) in hole 107BD06 and 2.3m @ 13.39 g/t Au (108BD06).

Kora North is the area of mineralised lode below Eutompi and lying between Kora and Irumafimpa at depth.

Mineralization comprises two parallel, steeply west dipping, N-S striking quartz-sulphide vein systems, K1 & K2, within an encompassing dilatant structural zone hosted by phyllite. An additional structure, the Kora Link, has also been defined and provides a possible link between the two main vein systems.

To date Kora North is defined by drilling and development from around 58,700mN to 59,160mN. K92 Mining Limited is successfully mining and exploring at Kora North. Figure 12Figure 16 shows the interpreted wireframes of the major mineralized veins, the Kora North September 2018 resource outline and the Irumafimpa and Kora North workings.

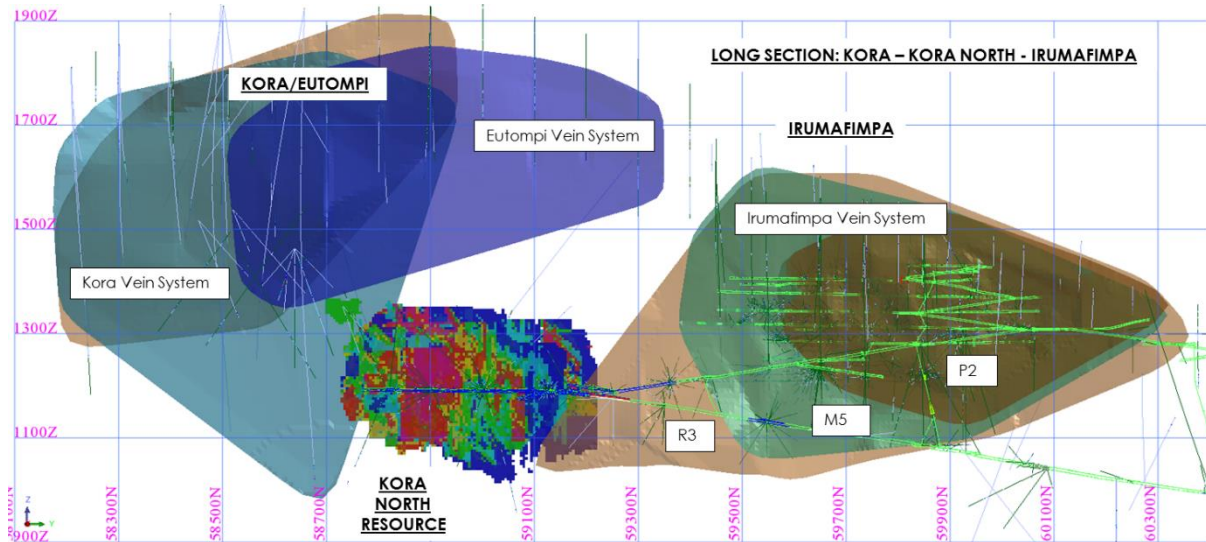


Figure 12. Longitudinal section looking from east to west of the Kora-Irumafimpa vein system.  
Source K92ML 2018

## 7.5 JUDD VEIN SYSTEM

A narrow intermediate and low sulphidation vein system located 200m east of and parallel to Kora which was partially tested by Barrick holes drilled to test the Kora lode at depth. This sporadic drill testing on the Judd lode returned a maximum intersection of 3m @ 278g/t Au. Surface mapping and sampling has indicated a mineralized strike length of over 2.5 km. Judd is located 200m east of Kora on ML150. Holes designed to specifically target the Judd lode have the potential to yield resources within close proximity to the immediate mine environment and have been allocated a high priority by K92ML.

K92ML has carried out mining on what it has interpreted as one of the veins of the Judd Vein system at depth at its Kora North workings. 15 face samples have been taken over 57m. The drive has been suspended pending completion of planned drilling. The highlight of the face channel sample results was an intercept of the interpreted Judd vein with a width of 2.4m @ assaying 3.71g/t Au, 14.81g/t Ag and 1.26% Cu. Figure 13 below is a plan of 1185 level drive development at Kora, highlighting K92's Judd vein. Figure 14 is a schematic oblique view with the interpreted mineralised envelopes of Kora and Judd veins based on Barrack data.



Figure 13: 1185 level plan showing the Judd Vein Drive, K1 and K2 of the Kora North workings

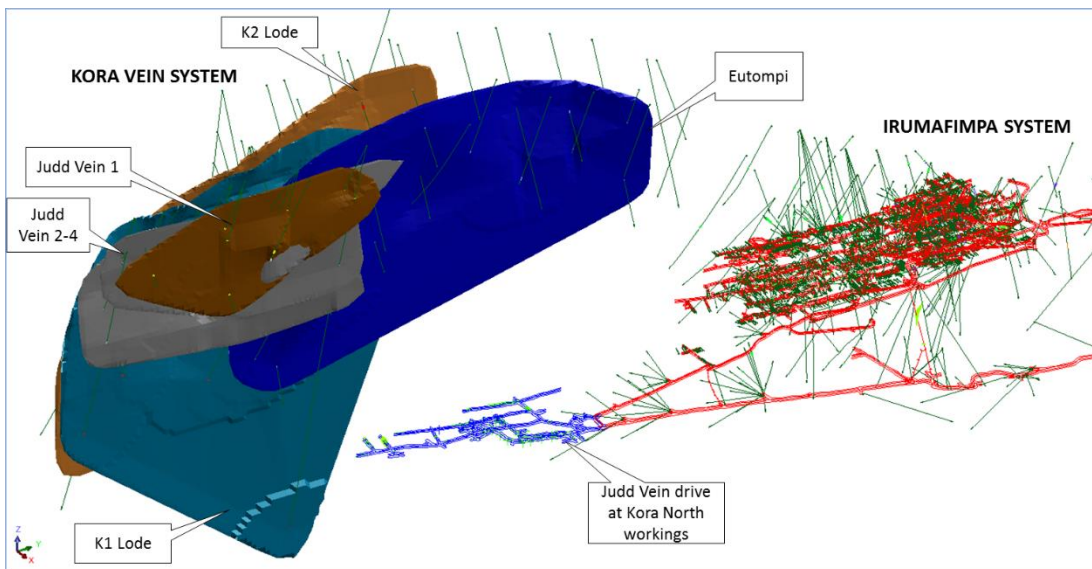


Figure 14: Oblique view schematic of Kora, Judd and Irumafimpa vein systems

(showing the relationship of K92 Judd drive working to interpretations of Judd veins 1 to 4 (dark Brown and Grey solids) and the Kora Lode made from the Barrack drill data.)

## 8 DEPOSIT TYPES

Gold-copper deposits within the SW Pacific Magmatic Arcs have been classified into three main groups by Corbett and Leach (Corbett and Leach, 1997):

- Porphyry-related (including gold skarn).
- High sulphidation gold-copper.
- Low sulphidation (including sediment-hosted replacement).

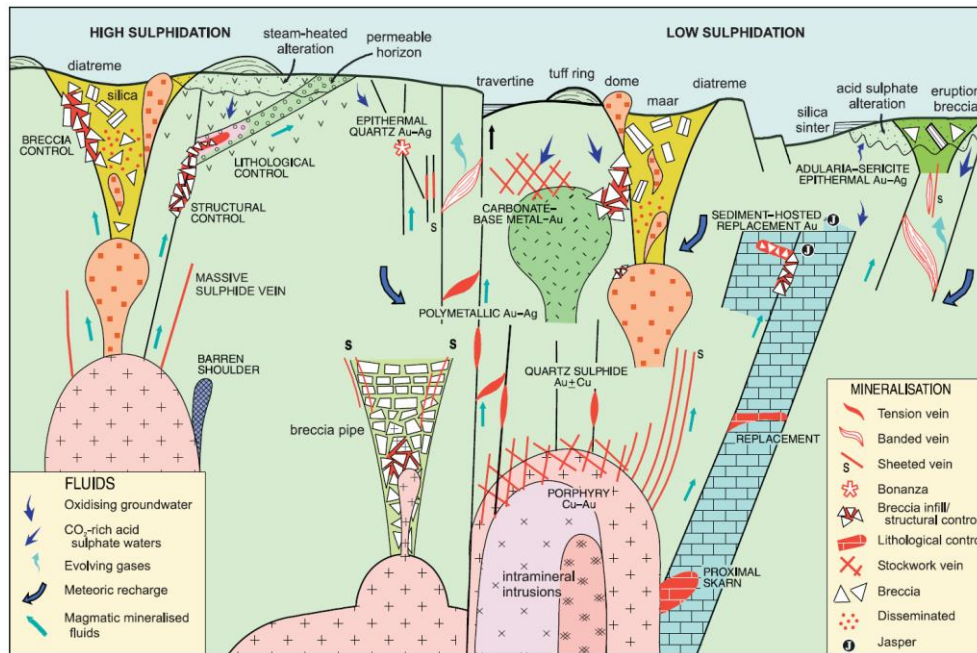


Figure 15. Conceptual model for porphyry and related low and high sulphidation mineralization.

Source Corbett 1997

Telescoping may overprint the varying styles of low sulphidation gold mineralization upon each other or upon the source porphyry intrusion.

Hydrothermal porphyry-related activity in the Kainantu area may have been protracted and associated with more than one intrusive phase (17 Ma to younger than 7 Ma). According to Corbett (2009), while the accepted wisdom is that porphyry Cu-Au mineralization in the Kainantu region is related to Elandora style porphyry intrusions, the coincidence of prograde alteration (Kokofimpa area; K-feldspar alteration) with Akuna-style diorite intrusions suggests alteration and mineralization may have been initiated at an earlier Akuna age and continued to an association with Elandora intrusions. The presence of Elandora clasts within advanced argillic altered breccias, is consistent with a protracted history of activity. The (17-13 Ma) extended age of Akuna intrusions provides for batholithic intrusions to be overprinted by the mineralized phase recognised herein and distinguished from the younger (9-7 Ma) Elandora-style intrusions. Corbett (2009) recommends limited age dating is conducted once field relationships are established.

These exploration models as used by HKL and Barrick emphasized the epithermal and porphyry geological setting, which is broadly correct, at least spatially. But these models were later refined by Espi and others (2006) who recognized that the high grade quartz-Au-telluride veins with common percent Cu grades and significant W and Bi (e.g. Irumafimpa and Kora) were likely a significant separate event not directly connected to a porphyry Cu-Au source. The term “intrusion-related lodes” was introduced to describe this mineralization style. The consistent Au-Te association is interpreted to indicate an alkalic intrusion source at depth. Felsic dykes observed adjacent to some of the mineralised veins could be derived from such a source and may serve as a useful exploration guide.

## 9 EXPLORATION

Historic exploration on ML150 (Irumafimpa, Kora, Judd, and Karempe) including drilling is reported in Section 6 of this report. Further exploration information at other prospects at Kainantu is described in Section 6 of the “Independent Technical Report, Resource Estimate and Summary of Mine Facilities, Kainantu Project, Papua New Guinea” by Nolidan Mineral Consultants, Author Anthony Woodward, April 15, 2016 and in Section 6 of the Independent Technical Report, Mineral Resource Estimate



Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 02 March 2017, which are filed on SEDAR.

In September 2016 two diamond drill rigs commenced work underground at the Irumafimpa gold mine. One rig was focused on drilling out the Irumafimpa deposit for grade control and mine planning purposes on a 15m by 15m pattern from 1220mRL and 1247mRL and another drill rig was targeting the Judd vein system from 950mRL.

The Judd vein system diamond drilling totalled 7 holes for 1,269m. Significant intercepts from the Judd drilling are presented in Table 1 in Appendix 1 of this report.

The Irumafimpa deposit diamond drilling totalled 114 holes for 9,288m. Mining and drilling was put on hold at Irumafimpa Deposit in early 2017 to give priority to mining and exploration activities at Kora North because of logistics, higher grades of gold and copper at Kora North and improved processing properties of the Kora North ore material. Significant intercepts from the Irumafimpa drilling are listed in Table 2 in Appendix 1 of this report.

In May 2017 drilling by K92ML commenced at Kora North and to date 83 holes have been drilled for 9,564m on 25 and 100 metre centres from the Kora Incline and from the 1185 Footwall Drive. A total of 461 face samples have been taken from 1,499 metres of drive development along the Kora 1 and Kora 2 veins. **Figure 16** is a location plan of the Kora North diamond drilling. Table 3 in Appendix 1 of this report lists significant intercepts from the Kora North diamond drilling.

Diamond drill hole, KMDD0009, intersected what K92ML interpreted as an extension of the Kora/Eutompi vein system approximately 130 metres from the Kora Drive. The intersection of 5.4 metres at 11.68 g/t gold, 25.5 g/t silver and 1.33% copper was approximately 500 metres to the north along strike and 150 metres down dip from the closest point of the currently defined Kora deposit inferred resource. Follow-up holes drilled intersected gold, silver and copper mineralization. In August 2017 drilling from underground recommenced to follow up on the Kora deposit extension discovery.

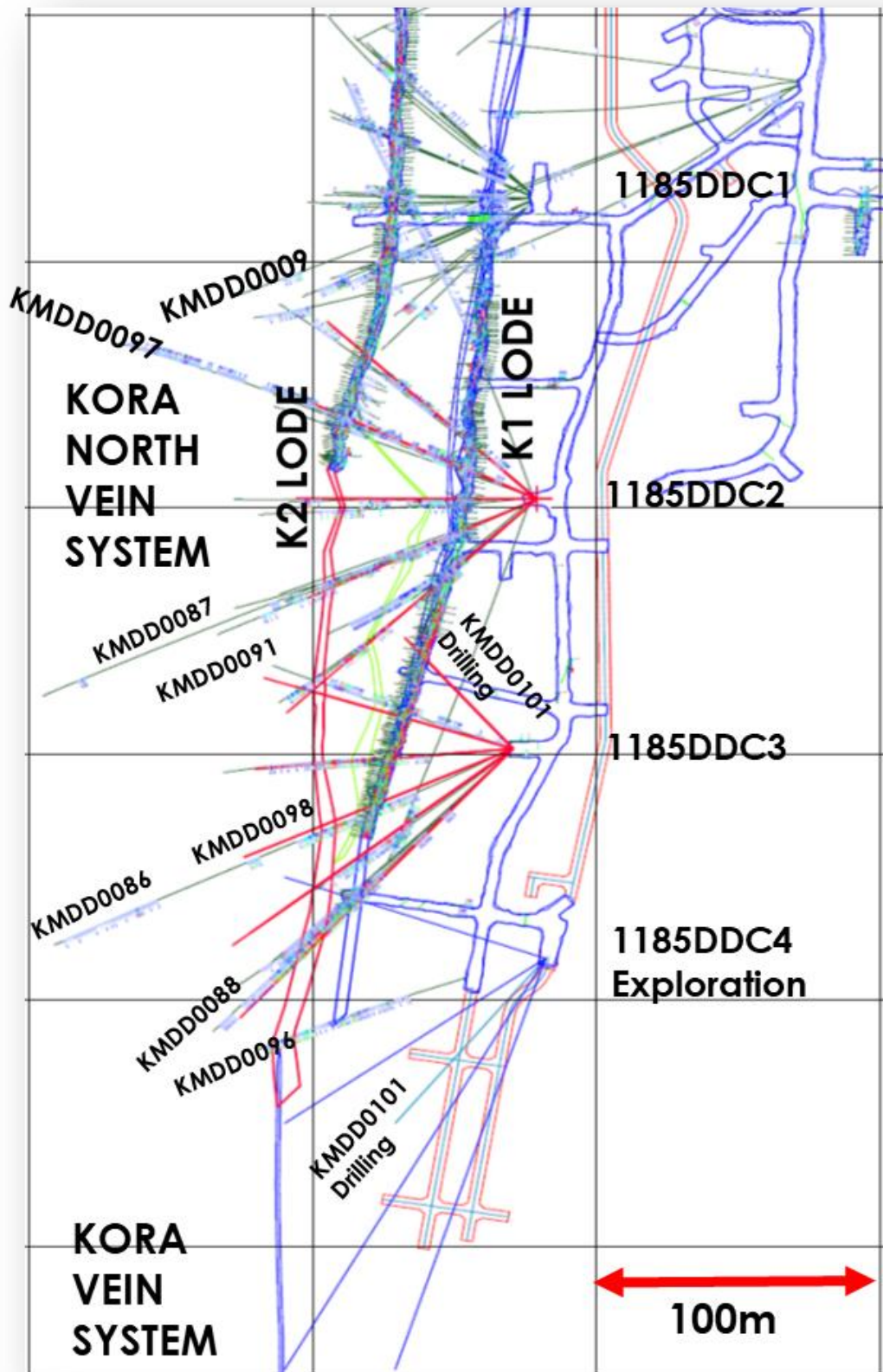


Figure 16. Plan View of Kora North Vein System Drilling  
Source: K92 (2018)

## 10 DRILLING

### 10.1 KORA NORTH DRILLING

Quest Exploration Drilling Contractors (PNG) were engaged to carry out the ongoing drilling requirements for the Kora North deposit. Two drill rigs, namely the Atlas Copco Diamec U4 and U6 drilling machines, were utilised to complete the diamond drilling. The drilling was carried out on a 12-hour shift basis, both day and night shifts in order to meet production demands.

The diamond drilling uses several core sizes at the Kora North deposit, namely LTK60, NQ, NQ2 and HQ. HQ and NQ were generally used to get competent samples through the lode system. The driller prior to drilling was given a drill hole work plan specifying the expected lode target positions, hole depth, azimuth, dip, core size and drilling method to use. The drilling contractor was monitored to ensure that all precautions were taken so that the diamond core recovered from the barrel was maintained in the best possible condition to maximise the information obtained by minimising breakage.

All diamond drill hole collars were surveyed in prior to drilling and picked up after completion by a Leica Total Station TS09plus instrument. The hole design is uploaded into the instrument and set out in the field. A reference (azimuth) line is marked at the foresight and backsight. The drill collar is also marked. The drilling dip is positioned using clinometer. A geologist checks the alignment of the rig on each hole before drilling is allowed to start. For hole pickup, a rod is inserted into the hole at the collar and two points along the rod is surveyed to determine the drilled azimuth and dip.

Down hole surveys were used for every diamond drill hole. Azimuths and inclination were measured using a Reflex EZ TRAC XTF capable of single and multi-shot operations. During the drilling of a hole single shots were done at 3, 9, 30, 60, 90m and so on including an end of hole shot. On the way back out of the hole, if hole conditions allowed, a multi-shot survey was carried out at every 3m interval along the entire hole. To avoid erroneous readings aluminium extension rods were used to place the instrument away from magnetic interference caused by the drilling equipment. Results from surveys are automatically calculated and displayed on the handheld device for the geologist to use.

No core orientations were done on any of the K92 diamond drilling holes as the geology of the closed spaced drillholes clearly showed the continuity of each lode.

Diamond core was laid out in the core trays by the drilling contractor, always in the upper left corner of each tray with respect to the long axis of the trays. The core trays were labelled with the hole number, tray number, start and finish depths. Plastic and wooden core blocks marked the end of each run with its downhole depth. Any core loss was recorded on the core block and run timesheet by the driller. Core was then removed from the drill site by the drilling contractor and taken to the 'core shed' for processing. At the core shed the core was measured for core loss and RQD determination.

A reference line is marked on the core and one metre intervals are annotated onto the core. The core is then logged according to a set of pre-defined codes, in particular for lithology, alteration, veining and sulphide mineralogy.

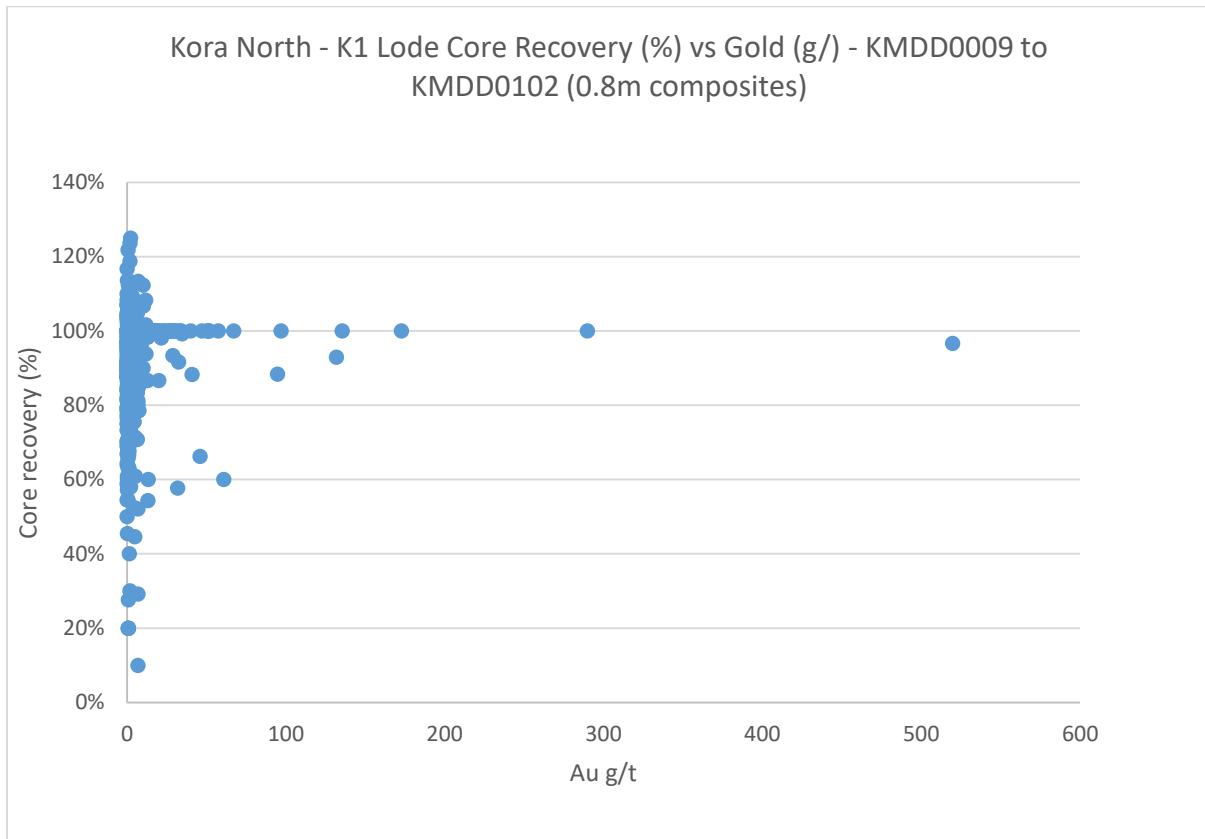
K92MLhas a standard underground face sampling procedure in place. A drive is being developed along each of the K1 and k2 Lodes and each is approximately 200 metres in length. Face sampling and mapping is done after each cut along the drive, with the cut interval along the drive being nominally 1.5m. The face geological mapping and channel samples are taken across the strike, at right angles to the drive.

### 10.2 CORE RECOVERY ANALYSIS

The recovery data for each core run was recorded on paper logs and entered into the database. Equal length weighted composites of 0.8m length were generated for gold (g/t) and recovery (%) values

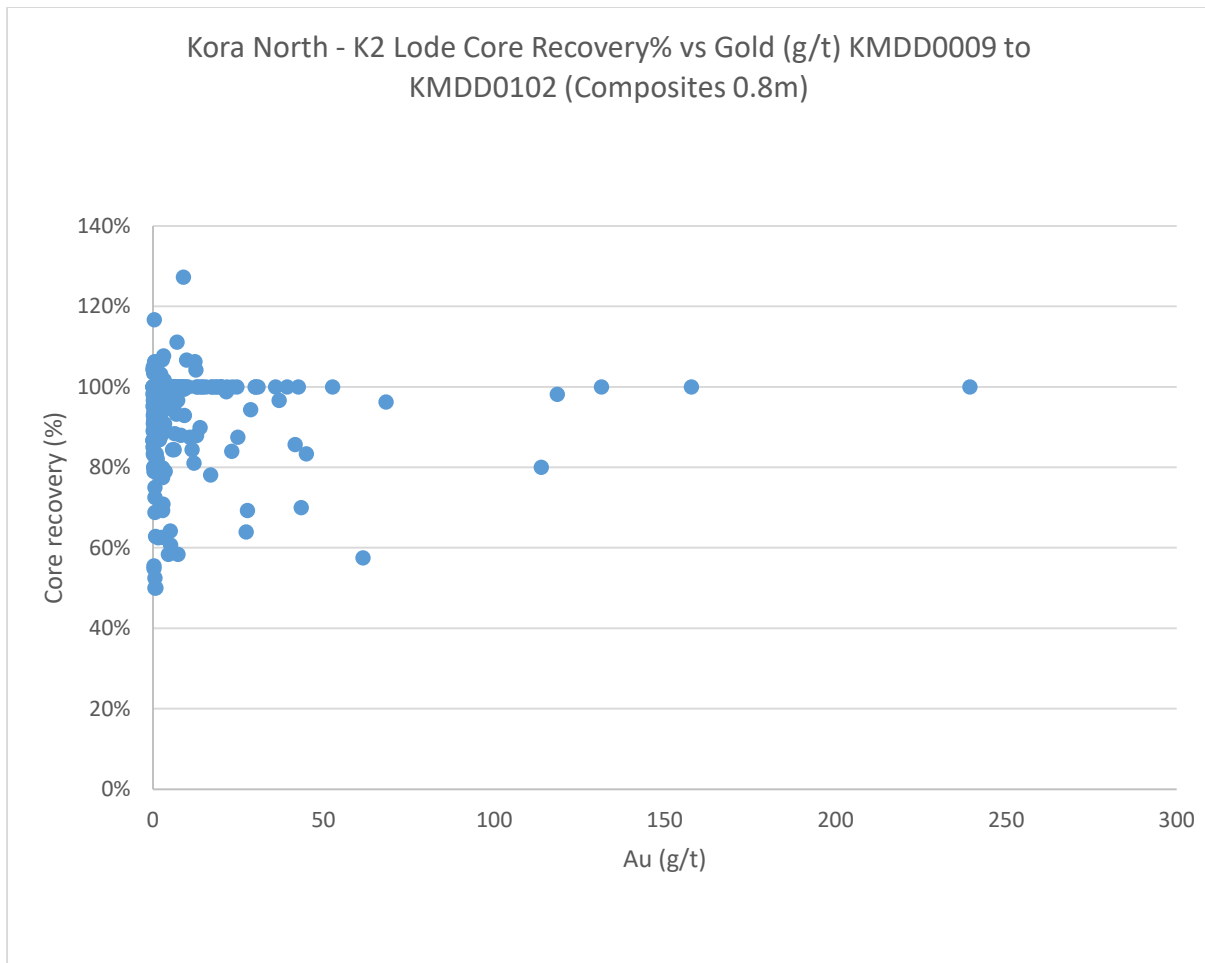
across the Kora North lode structure according to the geologically logged vein tags located in the assay table of the database in the field 'vein\_id'. This was done for each lode structure and enabled the comparison of gold grade versus the core recovery. Recovery analysis used holes KMDD0009 to KMDD0108 as KMDD0009 was the discovery hole for the Kora North deposit.

Figure 17 shows the gold grade versus recovery for the entire drillhole dataset for the K1 Lode and indicates there is no issue with core recovery and gold grade. It should be noted that the earlier drilling to approximately hole KMD0046A had recoveries averaging 90% rather than the later achieved value of >95%. Looking at the earlier data there is no issue with recovery and gold grade.



**Figure 17 K1 Lode intercepts Gold versus Core Recovery**

Figure 18 shows the gold grade versus recovery for the entire drillhole dataset for the K2 Lode and indicates there is no issue with core recovery and gold grade.



**Figure 18 K2 Lode intercepts Gold versus Core Recovery**

The conclusion is that there is no gold grade bias associated with recovery in particular there is no subset in the data of high gold grades associated with low recoveries.

## **11 SAMPLE PREPARATION, ANALYSES AND SECURITY**

### **11.1 SAMPLING**

Once the core has been marked up a geologist logs the core, determining sampling intervals according to the geology intersected. Once sample intervals are determined they are marked on the core by the geologist along with the sample number using a white paint marker or red china graph pencil. Sample intervals were guided by geological contacts/boundaries. A minimum sampling width of 0.1 metres and a maximum of 1 metre were used. The smaller sample intervals were utilised to sample individual sub-veins/stringers and sulphide intercepts. Core was sampled to at least 5m either side of each mineral lode, including stringer style mineralization away from the lodes. Unmineralized areas at the start of the hole, at the end of the hole and between lodes was usually left unsampled. All mineralized occurrences were sampled.

Sampling of the core involved sawn half core cut along the reference line. For LTK60, NQ, NQ2 and HQ core the left hand (looking down hole) half core is sampled. The remainder of the core is returned to the core tray. Core samples were placed in numbered calico and plastic bags and a numbered sample ticket placed in each for dispatch to the on-site assay laboratory.

Face samples, under geological control, were taken of the lode system and the waste, with sample intervals ranging from 0.1 to 1m in width depending on what the geologist decided. Two samples are

taken per interval at waist and knee height and the corresponding widths recorded. Sample lengths are <1.5m with samples approximately 3.5kg in size. Widths and dimensions of the mineralization were documented on a face sketch with the location of the face sketches determined by the geologist and surveyor using the surveyed stations along the drive. Assay for Au, Ag and Cu are averaged using length weighting of the sample interval and then, coupled with the orientation of channel and placed in the database. Standard QAQC procedures are used for underground samples as described in the ITR Mineral Resource Estimate and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, PNG dated March 2, 2017.

## **11.2 SAMPLE PREPARATION**

Intertek Laboratory services provides on-site laboratory facilities. The sample preparation for both the drill and face samples is described below:

- Samples are sorted and dried at 105°C overnight
- Jaw crushed to 5mm
- Secondary jaw crush using a Boyd crusher to 2mm and then rotary split to give 1kg
- Pulverisation using an LM2 mill of the 1kg sample to 90% passing 106microns
- Duplicate splits 1:30

## **11.3 SAMPLE ANALYSIS**

The analytical method is detailed as follows:

1. Gold
  - Fire Assay Method with a 30g charge (FA30)
  - Samples are fired with a modified fire assay flux, prills digested at 100oC with aqua regia and read on an Atomic Absorption Spectrometer (“AAS”)
2. Copper/Silver
  - 3 acid digest at 180oC. (Nitric, Perchloric & Hydrochloric mix).
  - Diluted with water and read by AAS
3. Carbon/Sulphur
  - Read by combustion furnace.
4. Fluorine
  - Following a carbonate fusion samples are read on a specific ion meter referenced against standards

## **11.4 QC PROGRAMS**

K92ML’s QAQC programme is for the drilling only and consists of standards (including blank standards), pulp duplicates (also known as lab duplicates) and umpire lab check assays. There is no QAQC programme in place for the face sampling.

### **11.4.1 Standards**

Two certified reference materials were purchased from Geostats Pty Ltd (Australia) and are certified for gold only. The two standards G914-4 and G915-8 correspond to low and high gold values respectively. Standard samples were submitted routinely as the 22<sup>nd</sup> sample in the sample sequence to the onsite laboratory.

The reported assays for the two standards indicate no significant bias. It is noted with the low grade standard that there are outliers in the data which need an explanation. The high grade standard shows good accuracy with no bias except for a return of a 40g/t assay that has been shown to be caused by a residue of a very high grade mineral sample in the pulverising bowl.

A plot of the low grade standard is included as Figure 19. (Sample\_id on the x-axis corresponds to time).

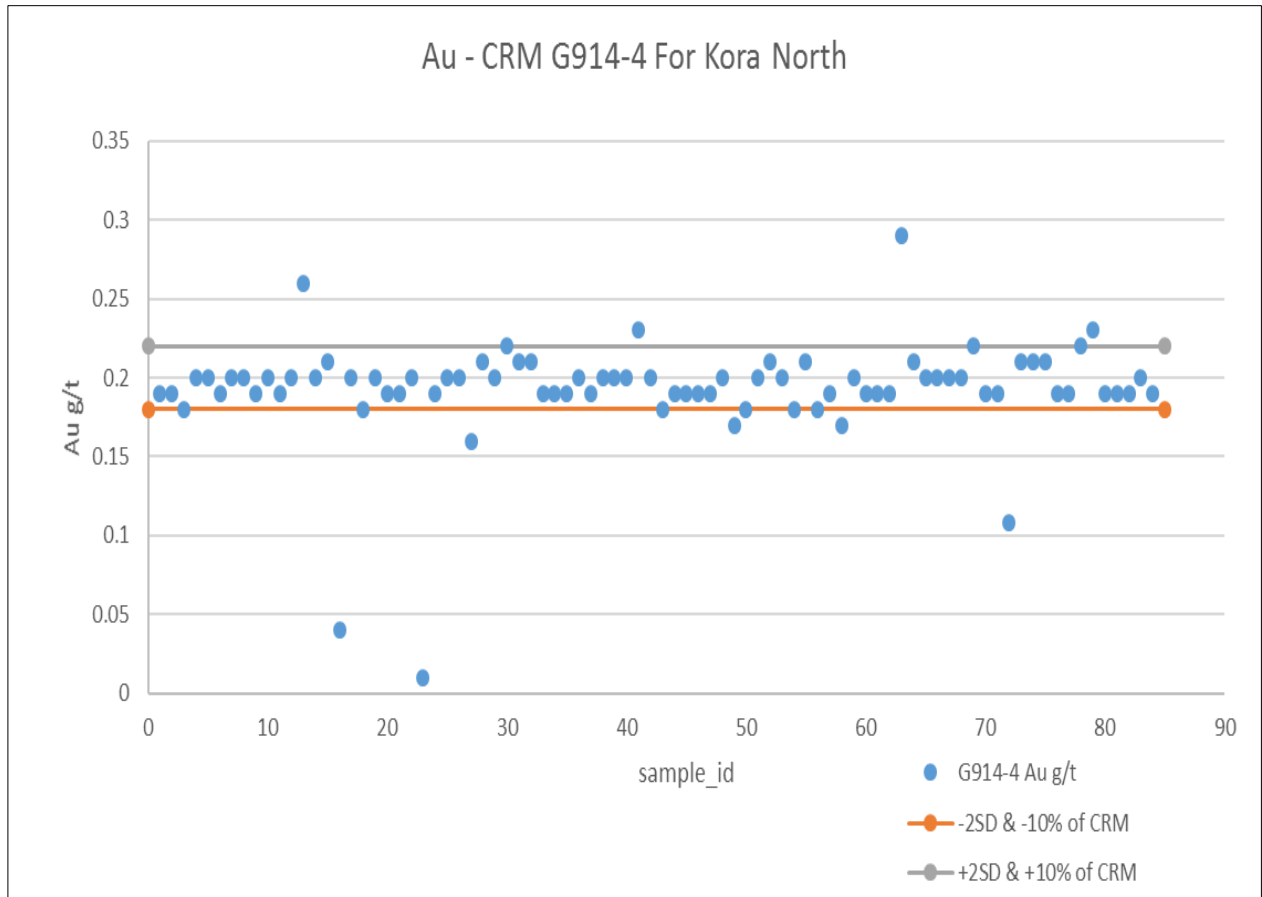
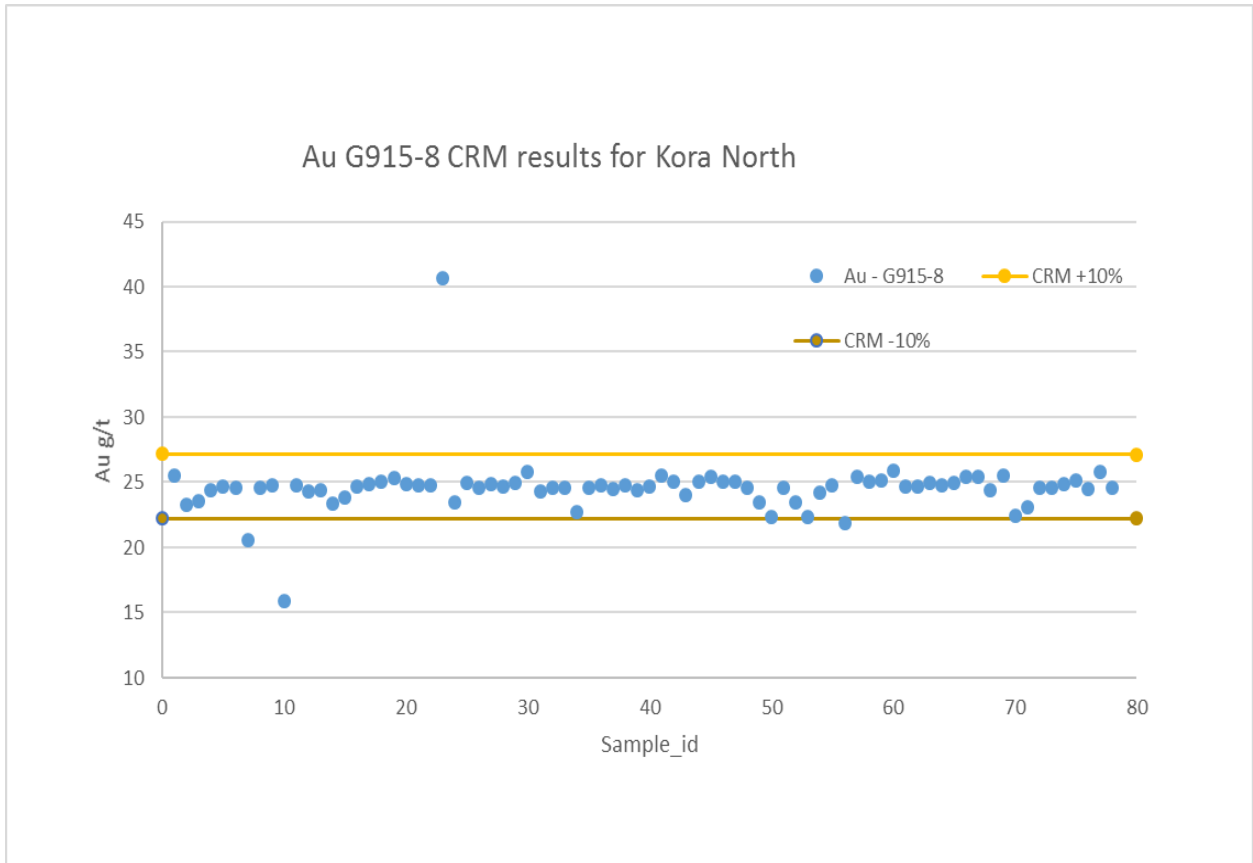


Figure 19 K92ML standard G914-4 CRM value = 0.2ppm Gold

A plot of the high grade standard is included as Figure 20. (Sample\_id on the x-axis corresponds to time).



**Figure 20 K92ML standard G915-8 CRM value 24.66ppm gold.**

Blank gravel standards were inserted into the sample sequence on the 21<sup>st</sup>, 41<sup>st</sup> sample etc. The blank material consisted of clean crushed phyllites and dacitic intrusives collected several kilometres away from any mineralization. The material was crushed in isolation from any other mine samples; several samples were submitted to the lab to prove it was blank prior to its use.

In total 171 blank samples were submitted. Gold results for the blank assaying are within acceptable limits of variation and are continually being monitored. The copper results indicate a change in the source material but are still useful for checking for contamination.

Plots of the blank results are included as Figure 21 for gold and Figure 22 for copper.



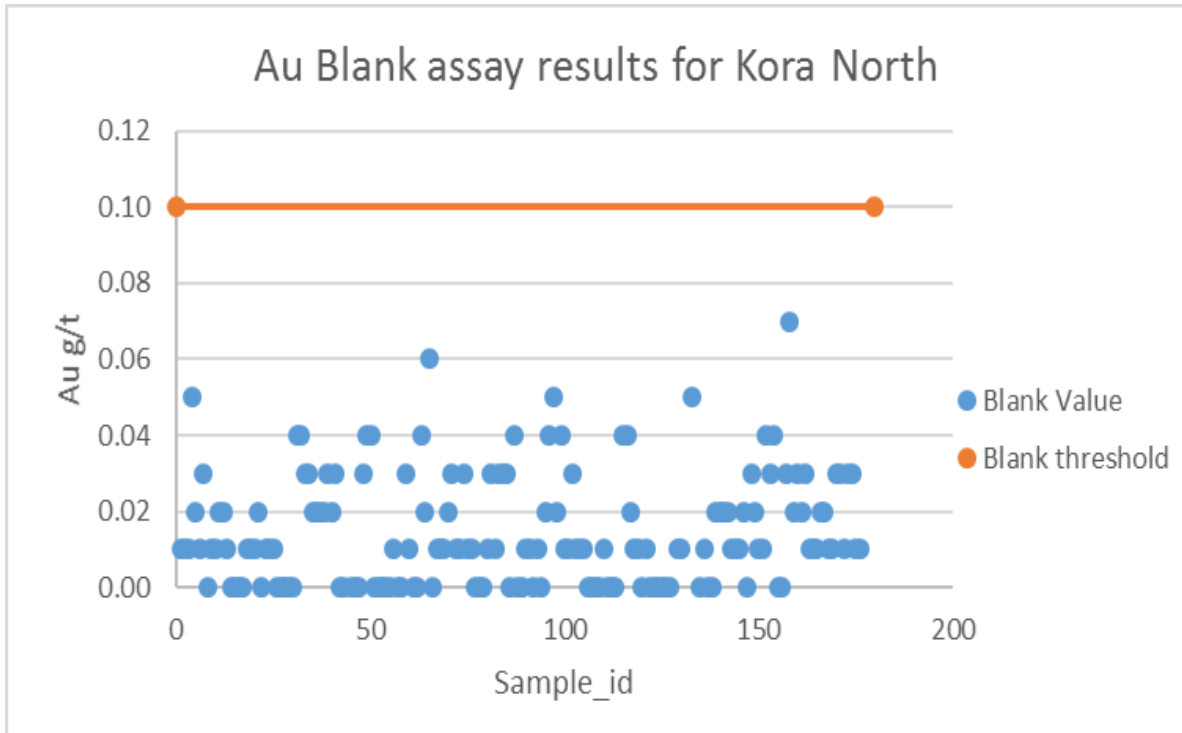


Figure 21 K92ML Blank Standard Material Au g/t

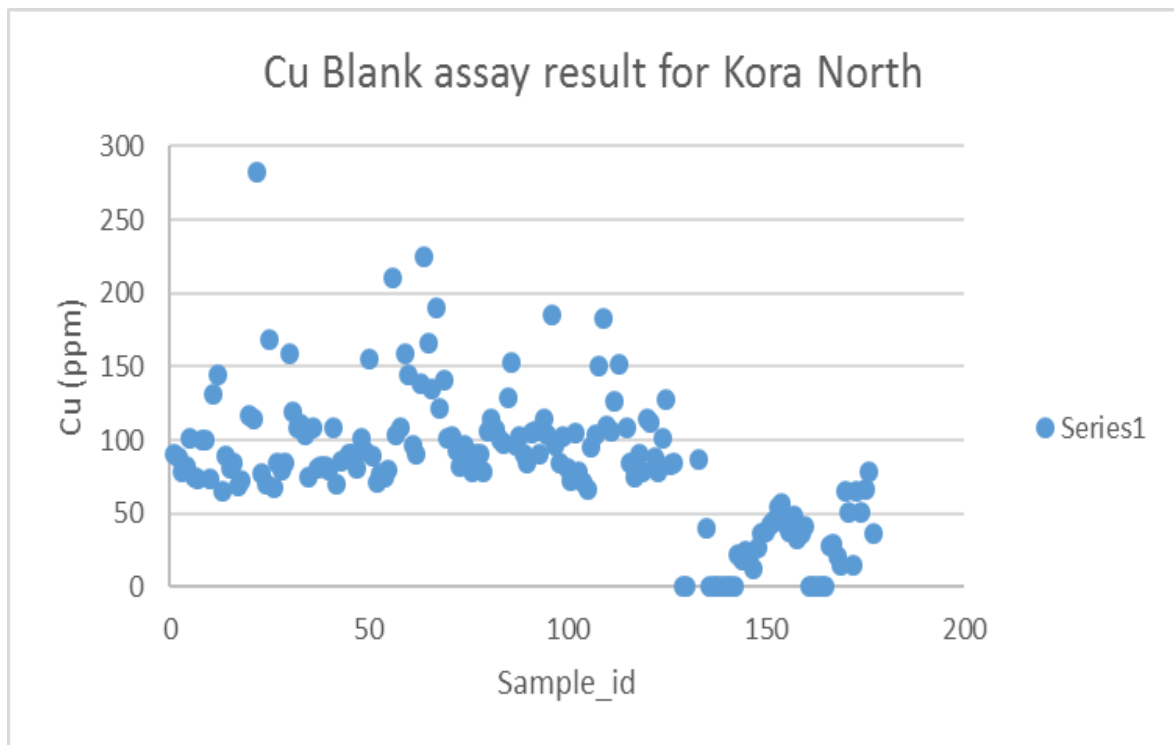


Figure 22 K92ML Blank Standard Material Cu ppm

#### 11.4.2 Lab Duplicates

Pulp duplicates were inserted every 23<sup>rd</sup> sample in the sample submission sequence of the diamond core which was sent to the on-site Laboratory.

The results of gold pulp duplicates showed a good match with the original sample with no evidence of any bias (Figure 23).

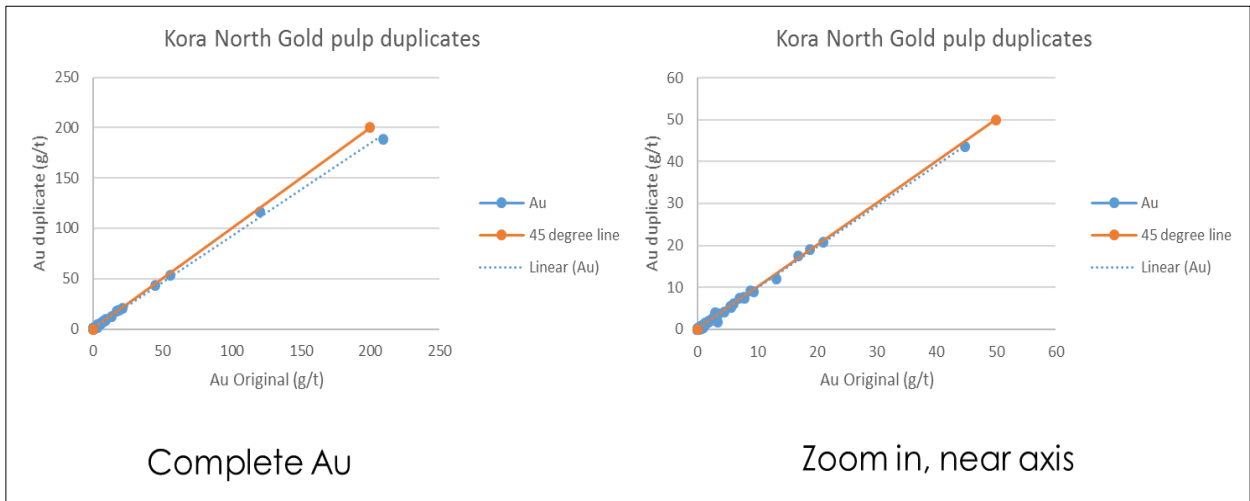


Figure 23 Pulp Duplicates Gold

The results of copper pulp duplicates showed a good match with the original sample with no evidence of any bias (Figure 24).

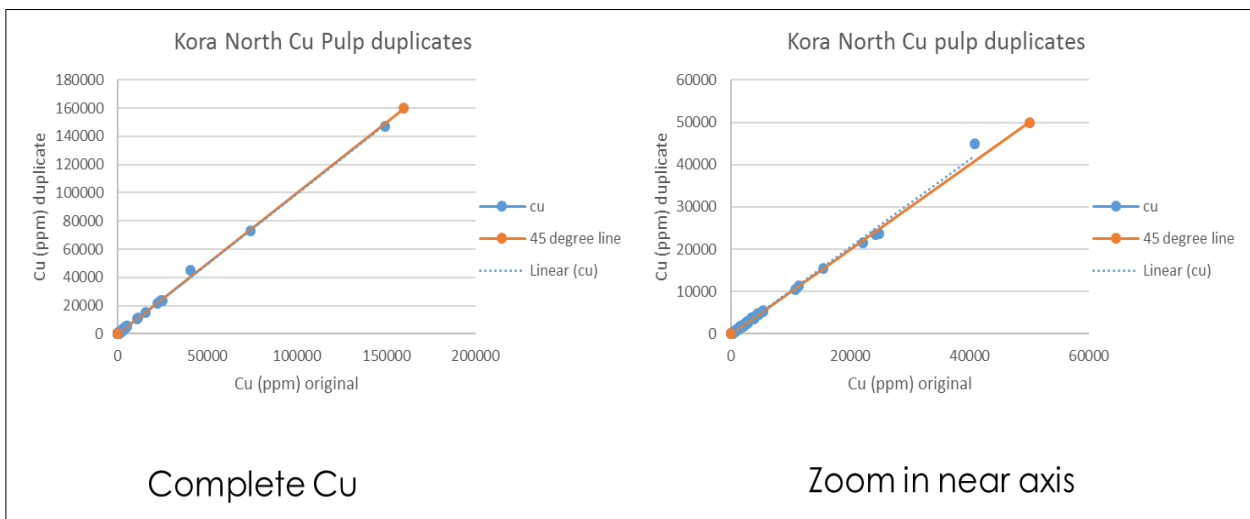


Figure 24 Pulp Duplicates Copper

The results of silver pulp duplicates showed a reasonably good match with the original sample with no evidence of any bias (Figure 25). The bigger scatter with higher silver grades is noted, but has no obvious bias.

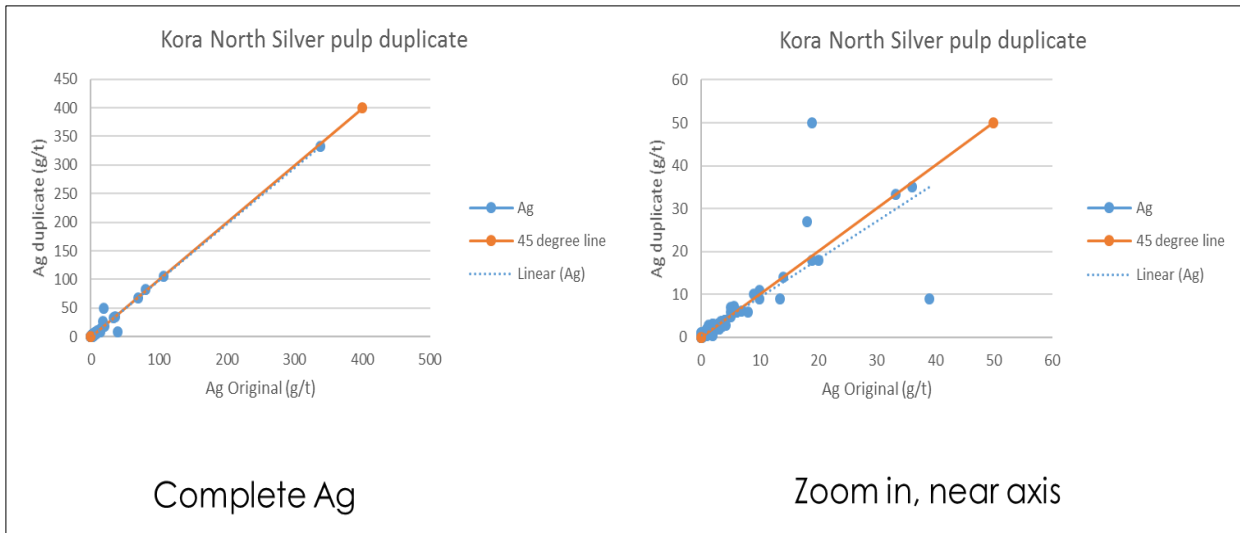


Figure 25 Pulp Duplicates Silver

### 11.4.3 Check Assays

A program of check assaying was carried out by K92ML whereby a series of 100 mineralised pulp core samples including CRMs were submitted to a secondary laboratory (SGS, in Cairns Queensland). The SGS assaying used the same techniques as Intertek with the comparison of results between laboratories providing a second check on analytical accuracy.

Check sampling is now a routine process completed on a 3-4 month cycle.

Figure 26 shows the results of the check analyses for gold and suggest a minor positive bias with the Intertek on site results.

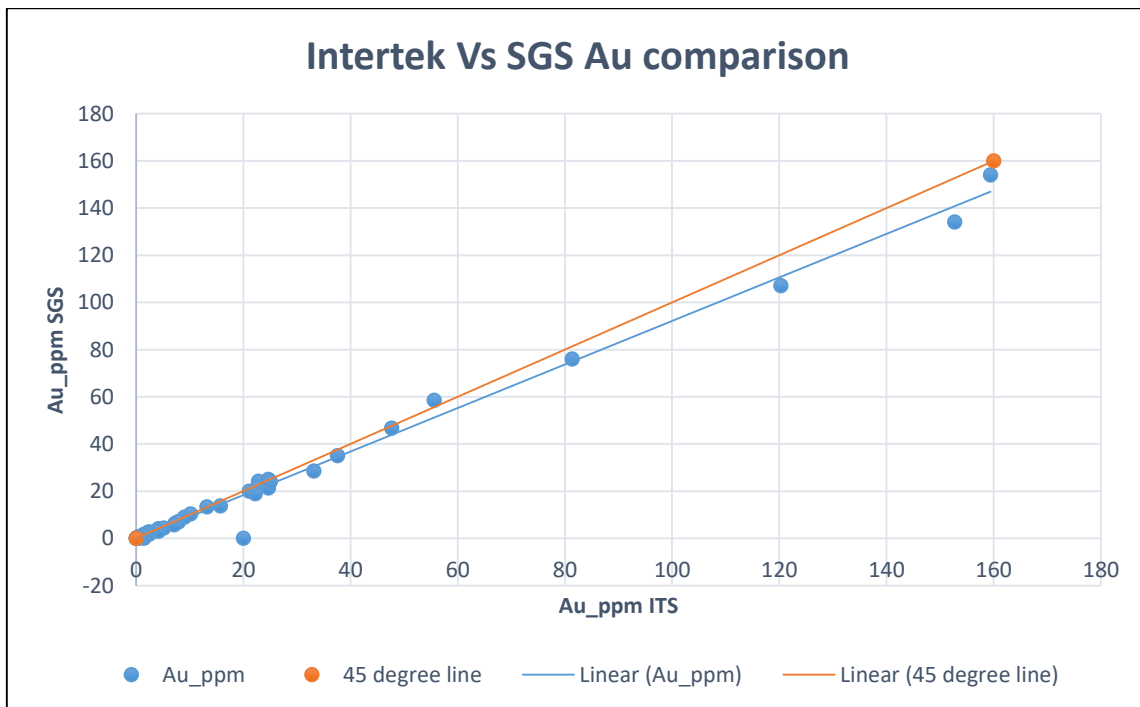


Figure 26 Check Analyses Gold

Figure 27 shows the results of the check analyses for copper and suggest a possible modest positive bias with the Intertek results.

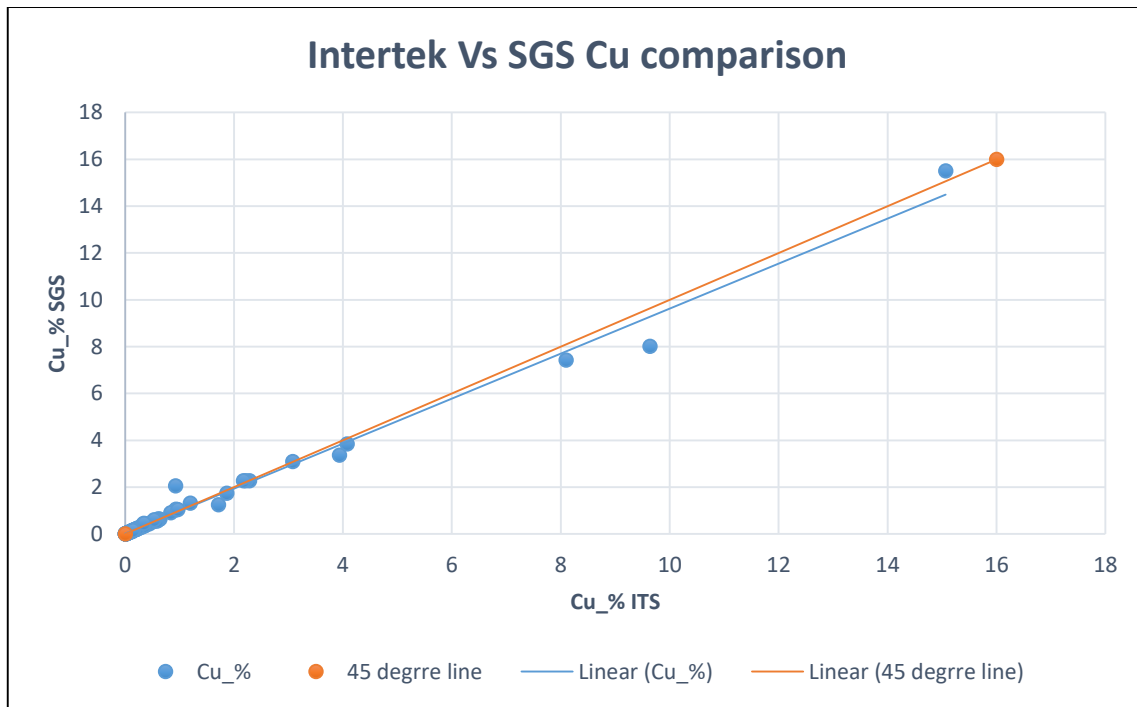


Figure 27 Check Analyses Copper

No twin hole data was available. No coarse reject analysis was completed.

## 11.5 ADEQUACY OPINION

The conclusions for the QAQC programme is that it is adequate and that there are no major issues with the outcomes. It is recommended that a head grade standard around 8-10g/t is used to match the anticipated head grade of the deposit.

## 12 DATA VERIFICATION

### 12.1 SITE VISITS

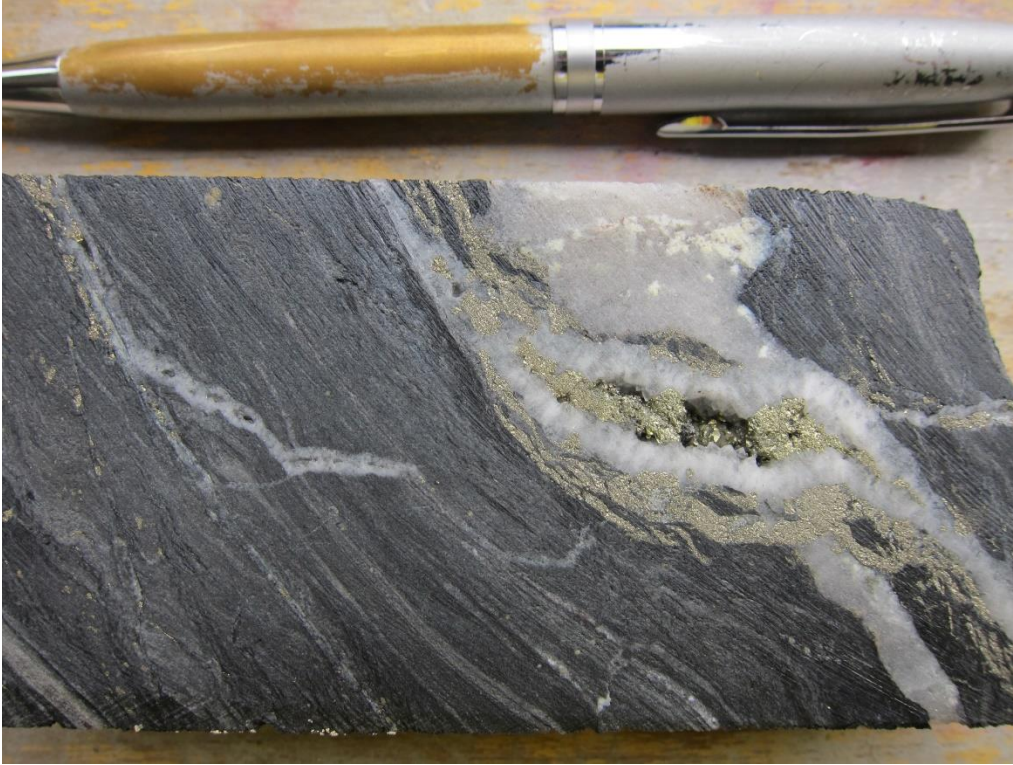
A site visit to Kora North was completed by Simon Tear of H&SC Consultants Pty Ltd from October 21<sup>st</sup> to 23<sup>rd</sup> 2018. The visit included:

1. Inspection of underground workings including exploration drilling and geological assessment. This included, where safe, face inspections of both the K1 and K2 Lodes. An example of the K1 Lode is included as Figure 28. It shows a complicated structural zone with a central pyrite vein (best shown at top of picture) with subsidiary pyrite zones either side and a quartz vein breccia on the right hand side. This confirms the geological interpretation for the resource estimation.



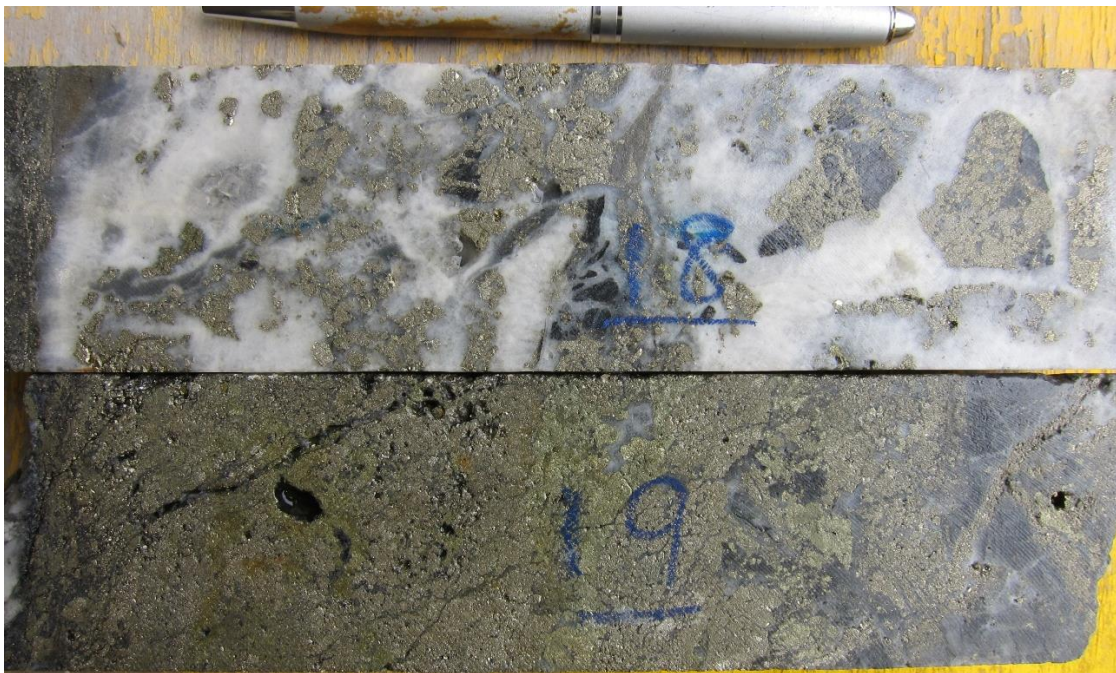
**Figure 28 K1 Lode Face (field of view approximately 4.5m)**

2. An inspection of the processing plant including the on-site laboratory assay facilities. This confirmed metallurgical assumptions for the resource estimate and allowed for discussions on reconciliation and the derivation of 'other' material processed by the plant. This impacts favourably on the resource classification.
3. Visual check of randomly selected laboratory-issued assay sheets with database entries (10% of drillholes). No issues were noted. This impacts favourably on the resource classification.
4. A review of drillcore: this included 8 holes for 1,120.8m covering a spatial and temporal range of mineral intercepts for the K1, K2 Lodes and the Kora Link. The core examination involved comparing the hardcopy geological logs with the actual core. In addition, assays for the 8 holes were also compared, as best as possible, with the sawn half core. A clear understanding on the characterisation of the mineralization was observed with no obvious issues with the logging or the assaying noted. A small scale version of the potential geological model is shown in Figure 29. Oblique angled compression in a wrench fault system has generated a sigmoidal tension gash which has primary quartz vein formation cut by later pyrite (and gold) mineralization. With continuing dilation then allowing for the final chalcopyrite mineral phase to crystallise. This confirms the K92ML proposed geological model.



**Figure 29 Mineralised Sigmoidal Tension Gash K2 Lode**

In Figure 30 the lower piece of core shows the semi-massive to massive pyrite (and gold) and chalcopyrite mineralization for the K2 Lode whilst the upper piece of core shows the quartz-breccia style of mineralization.



**Figure 30 Examples of K2 Lode Mineralization**

## **12.2 OTHER SITE VISITS**

Mr. Woodward visited the Kainantu site in November 2014 while the project was on care and maintenance and in November 2016. The site visit included a visit to the rehabilitated underground workings, underground diamond drilling sites, and inspection of the treatment plant.

Chris Desoe (AMDAD) visited Kainantu site in June 2016. The project was in the initial stages of restarting, focussing on rehabilitation of the underground access and establishment of power and ventilation. Mr Desoe examined the surface facilities and various areas of the existing underground workings.

## **12.3 LIMITATIONS**

No independent samples were collected for analysis during the site visits. Industry standard procedures appear to have been used.

## **12.4 VERIFICATION OPINION**

Based on the data verification performed, it is the QP's opinion that the collar coordinates, downhole surveys, lithologies, and assay results are considered suitable to support the mineral resource estimation.

# **13 MINERAL PROCESSING AND METALLURGICAL TESTING**

This section refers to both historical information derived prior to commencement of Irumafimpa-Kora operations and subsequent reviews of operations and metallurgical performance which were used as the basis for the planning of the refurbishment of the mill by K92ML. The following descriptions are summarised from Barrick (2014).

## **13.1 MINERALIZATION CHARACTERISTICS**

The main Irumafimpa-Kora lode of the Kainantu Project is sulphide-rich Cu-dominant mineralization overprinted by a quartz-rich Au-dominant crustiform quartz vein to breccia system with high gold associated with tellurides (Calaverite AuTe).

There is currently no geometallurgical model for Irumafimpa or Kora. Assessment of the previous mining operation shows that the inability to inform the plant metallurgists of impending feed characteristics often resulted in dramatic consequences and inefficiencies in the operation of the plant.

The mineralization is consistent with the operations in 2018, as described in sections 7.3 and 7.4,

Operations in 2018 have provided improved understanding of the deleterious impact of clays on the performance of the process plant.

## **13.2 NATURE OF TESTING AND RESULTS**

### **13.2.1 Samples 2000**

Initial metallurgical test work on Kainantu diamond drill core samples was carried out by Metcon Laboratories (Sydney) in 2000. Only a limited amount of test work was conducted, and included gravity recovery and flotation testing. Leach and Carbon-In-Leach of the whole ore and the flotation concentrate was also conducted.

### **13.2.2 Irumafimpa Samples – March 2002**

Two samples were provided by the Highlands Pacific Group for metallurgical testing. The sample used for test work is cited in the HRL report as being from the Mill Vein. The quartz lode was originally classified as the Mill Lode, though it was later reclassified as probably being the Puma lode.

The sample tested at HRL was taken from a quartz lode that intersected the main adit drive at 29,934mE 60,060mN (local Irumafimpa Grid). The quartz lode was approximately 1.0 m true width. The sample was recovered from a blast across the full width of the lode, and as such the lode sampled at this point would represent close to a full mining width.

The sample sent to AMDEL for comminution testing was taken from the same location as the sample used for metallurgical test work at HRL, and would have consisted largely of quartz.

Data from these tests were used for project feasibility studies and plant design.

### 13.2.3 Kora Test work 2009

In 2009, test work was completed by AMMTEC on two composite samples from Kora. Composite 1 was described as “High Au Intervals” and Composite 2 was described as “High Cu Intervals”. The test work was divided into two stages, the first to determine the grind size and the second to optimise float and gravity recovery at that grind size.

The conclusions were:

- Composite 1 – The test work indicates a recovery of 91.9% of the gold, via gravity (66%) and copper mineral flotation (25.8%) with a concentrate gold content of 200–300 g/t. On the same sample, the copper recovery into the float concentrate is 91.3% with a copper concentrate grade of 20-30% copper. The flotation mass recovery is in the region of 30%.
- Composite 2 – The test work indicates a recovery of 90.3% of the gold, via gravity (61.6%) and copper mineral flotation (28.7%) with a flotation concentrate gold content of 6-7 g/t. On the same sample, the copper recovery into the float concentrate is 90.8% with a copper concentrate grade of 20-25% copper. The flotation mass recovery is in the region of 12%.
- Pyrite Flotation – The gold recovery from the pyrite flotation is relatively low with Composite 1 recovering 2-6% gold and Composite 2 about 5% recovery. The economics of installing a dedicated pyrite flotation plant would have to be closely evaluated before including these recoveries in the overall recovery.

No additional metallurgical work has been undertaken since the test work was completed by Ammtec in May 2009.

**Table 11: Kora recoveries adjusted for saleable concentrate.**

Method	Element	Composite 1 High Au Interval	Composite 2 High Cu Interval
Gravity Recovery	Au	66.04%	61.62%
Copper Mineral Flotation Recovery	Au Cu	25.86% 91.29%	28.71% 90.80%
Overall Recovery	Au Cu	91.90% 91.29%	90.33% 90.80%

### 13.2.4 Kora Operations 2018

For the Kora North and main Kora operations, excluding the link zone, the metallurgical performance has exceeded the laboratory test work, despite the lower Cu grades in the ore. The primary grind has been finer than target, at P<sub>80</sub> 75 µm v design P<sub>80</sub> 106 µm.

No parallel metallurgical test work has been undertaken to confirm laboratory v process plant performance. This is planned for the future and will inform to primary and regrind requirements for the expansion.

A summary is shown in the table below.



**Table 12: Process plant recoveries.**

MONTH	ORE SOURCE							FEED GRADE		PLANT RECOVERY	
	K1 & K2 Stope-Dev.	1235_SS (IR)	xc8835 fallout	xc8835 development	Muck Bay 4 fall out	JUDD1 vein development	Irumafimpa	Au g/t	Cu %	Au %	Cu %
Oct-18	99%	1%	0%	0%	0%	0%	0%	31.1	0.31%	95.34%	93.36%
Sep-18	100%	0%	0%	0%	0%	0%	0%	17.3	0.40%	94.98%	94.92%
Aug-18	87%	10%	3%	0%	0%	0%	0%	16.9	0.38%	93.09%	92.64%
Jul-18	53%	0%	7%	0%	13%	27%	0%	9.7	0.12%	92.56%	82.72%
Jun-18	82%	0%	0%	3%	0%	15%	0%	29.9	0.34%	94.44%	94.03%
May-18	100%	0%	0%	0%	0%	0%	0%	17.4	0.33%	92.72%	92.68%
Apr-18	100%	0%	0%	0%	0%	0%	0%	18.4	0.40%	93.41%	94.12%
Mar-18	100%	0%	0%	0%	0%	0%	0%	13.8	0.46%	93.43%	93.08%
Feb-18	100%	0%	0%	0%	0%	0%	0%	24.2	0.38%	94.26%	91.78%
Jan-18	100%	0%	0%	0%	0%	0%	0%	12.9	0.48%	86.22%	89.80%

Overall, for the Kora deposit, based on minimal ingress of clays, the Au and Cu process plant recovery are 93%.

### 13.3 ORIGINAL PROCESS SELECTION AND DESIGN

Test work was conducted for a number of process options including combinations of flotation and leaching. The final process selection was based on bulk flotation to a saleable high gold content concentrate.

The original plant design, engineering and construction were undertaken by Ausenco in 2005. The plant design criteria were based on test work, owner's information, engineers experience and industry practise. The basic design was:

- Primary jaw crusher;
- Double deck screen with recycle crushers;
- Ball mill with cyclone;
- Flash flotation in the milling circuit;
- Rougher and cleaner flotation;
- Concentrate filtering;
- Tailings disposal dam.

There was initial consideration to install a gravity recovery plant, but this was subsequently removed from the design. The test work conducted identified a suitable depressant to produce an acceptable level of fluorine in the concentrate. Mass and solution balances were developed for 170,000 dry tonnes per year. Equipment selection and sizing followed accepted industry practice and the plant was constructed to a sound quality for a minimum 10-year mine life.

### 13.4 RECOVERY ASSUMPTIONS

In operation, gold recovery varied considerably since commissioning the plant. It was not possible to consistently realize the recoveries that were achieved with laboratory test work on the ore.

Test work was conducted on site during October-November 2006 by JK Tech. Based on recommendations from this work, operations improved.

Data between January 2007 and November 2007 were reviewed by Barrick to establish a reasonable estimate going forward. During this period, 125,341 tonnes of ore were treated to produce 8,178 tonnes of concentrate, equating to a mass pull of 6.5%. It was noted that mass pull in October and November was approximately 4.5%, which is believed to be due to the addition of lime as a pH modifier to suppress pyrite flotation and increase concentrate grade. However, for the purposes of the study it is assumed that this may not be a sustainable practice, and the average mass pull over the whole time period was used.

The average gold recovery over the same time period was 85% into a copper-gold sulphide concentrate. It should be noted that HPL was able to achieve weekly recoveries of up to 95% on a regular basis.

In 2018 operational recoveries of Cu and Au exceeded 93% generally, as described above. Recoveries of Au and Cu can be significantly adversely impacted by the presence of clay materials. The higher recoveries are expected to apply to Kora and Kora North at 93% for Cu and Au with minimal presence of clay materials.

### **13.5 REPRESENTIVITY**

To the extent known, it is understood the test samples were representative of the various types and styles of mineralization and the mineral deposit as a whole. Added to this is the fact that this was an operational plant processing material directly from the mine.

### **13.6 FACTORS AFFECTING POTENTIAL ECONOMIC EXTRACTION**

Previous operation of the process plant on ore from the Irumafimpa resource and current operation on ore from the Kora resource provides confidence in the ability to operate and the base assumptions for economic evaluation of future operations – throughput, gold recovery and concentrate grade. For Irumafimpa, the identified issues from testing and early operations (high fluorine in concentrate and low concentrate gold grade) were successfully mitigated through the use of specific gangue depressant and general pyrite depression with lime addition.

The previous operations were able to achieve concentrate sales at satisfactory terms to traditional markets for copper sulphide concentrates and there is every likelihood that a new operation would be able to do the same.

Current concentrate sales are achieving satisfactory terms, with no penalties imposed for Fluorine in concentrate.

## 14 MINERAL RESOURCE ESTIMATE

The new resource estimates for Kora North are based on samples from diamond drillholes and face sampling of development drives. Table 13 provides summary details of the sampling.

**Table 13 : Summary Details of Sampling Method**

Type	Date	No	Metres	Ave Length (m)
Diamond	Oct 2017 to Sept 2018	83	9,564.17	115.23
Face	Oct 2017 to Sept 2018	461	1,499.28	3.25
Total		544	11,063.45	

The resource estimates for the Kora North deposit were prepared using Ordinary Kriging (“OK”) in the H&SC in-house GS3 modelling software package. H&SC considers OK to be an appropriate estimation technique for the type of mineralization, its extent and the nature of the available data. The resource estimation includes some internal low grade material. The drillhole data and resulting GS3 models were loaded into the Surpac mining software for geological interpretation, composite selection, block model creation and validation, resource estimate reporting and to facilitate any transition to future mining studies.

The GS3 modelling software was developed by Neil Schofield (ex-Stanford University) and contains both Multiple Indicator Kriging (“MIK”) and OK modelling techniques.

The approach to resource estimation for Kora North is relatively straightforward. A 3D interpretation of geological domains as wireframes for K1, K2 and the Kora Link was completed using the Surpac software. These wireframes were used to select sample composites from the drillhole database which were then subject to data analysis including aspects of spatial distribution (variography). OK modelling was used with up to 8 search domains, based on subtle variations in dip and strike of the lodes. The resulting 3D models were loaded into a block model created using the Surpac software. Post-modelling processing was undertaken in Surpac along with block model validation including reconciliation with production. The newly generated resource estimates were classified taking into account a number of factors including sample spacing and distribution, variography, QAQC procedures and outcomes, density data, core recovery and geological understanding.

### 14.1 SUPPLIED DATA

H&SC was supplied by K92ML the following items:

1. A drillhole database in Access for direct use in Surpac. Drillhole data comprises underground diamond cored holes and face sample lines from the current mining
2. A series of 3D wireframes representing the mineral lodes i.e. K1E, K1W, K2 & Kora Link, plus other surfaces including fault structures and topography
3. 3D wireframes for the underground development and the stope solids generated from mining
4. Mill production figures
5. Several reports covering different aspects of the underground drilling for Kora North e.g. analysis of recovery, density data, QAQC procedures and outcomes

### 14.2 GEOLOGICAL INTERPRETATION

The Kora North deposit consists of a relatively complex, dilational structural zone hosted in Tertiary phyllites. The mineralization zone comprises narrow high grade gold quartz-sulphide veins, veinlets and disseminations. Historically the K1E Lode was delineated in the footwall of the structural zone and shows a marked higher gold grade than other lodes in the general Kora/Irumafimpa area. The

K1W Lode was identified immediately adjacent to the hangingwall of the K1E Lode and has a much lower grade gold zone associated with it. This lode is then structurally overlain by a clay fault zone of varying widths. A distinct separation comprising relatively barren phyllite then occurs before reaching the hangingwall zone of the dilational structure where the K2 Lode resides. This lode is noted for its much higher copper content as chalcopyrite blebs, veins and masses associated with modest amounts of quartz veining. Initial modelling by H&SC used the K92ML-supplied K1E, K1W and K2 Lode wireframes, which were based on a 1g/t gold cut off and resulted in wireframes considerably narrower than the current development drives and stope widths. Reconciliation with mill production indicated that using the narrow wireframes considerably understated the amount of tonnes sent to the mill and the gold ounces produced by the mill.

Preliminary modelling and a site visit review by Simon Tear of H&SC of the underground geology and mining method along with viewing drillcore resulted in a reappraisal of the wireframe designs. The result was a larger K1 wireframe shape, combining K1E and K1W Lodes, and was based simply on the presence of gold mineralization derived from the assays i.e. using a much lower, circa 0.2g/t, gold cut-off grade, in combination with some geological control and a nominal minimum mining width of the current stoping and development i.e. approximately 4.5m wide. A similar process was applied to K2 which also resulted in a larger wireframe.

The main lodes generally strike north-south with a very steep dip to the west (Figure 31). The geological interpretation extends 25m along strike beyond the last mineral intercept and has arbitrarily decided upper and lower limits, sufficient for grade interpolation and the provision of target areas for further exploration and possible resource extension. The Kora Link has a much shorter strike length and dips moderately to the east.

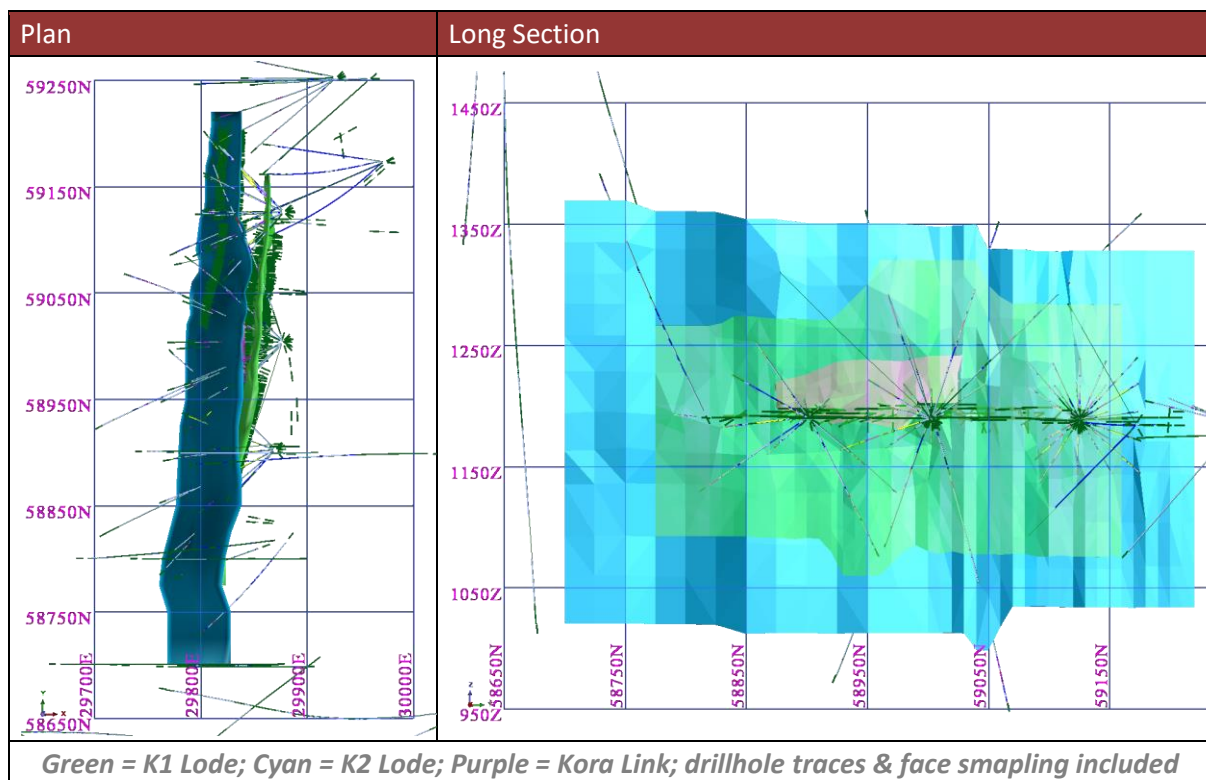


Figure 31 Plan and Long Section of the Kora North Mineral Lodes

The advantage of this wireframing technique is to first avoid over-constraining of the gold mineralization, as the contacts are not always sharp, and hence avoid potential overstatement of the gold grade in any subsequent resource modelling. Second the new lode shapes better reflect what is

actually mined and sent to the mill for processing. This will allow for the opportunity of better reconciliation. The new wireframes were primarily constructed as strings on 10m spaced E-W sections expanding to 25m spaced sections at the northern and southern ends. There is some suggestion at the south end of the deposit that K1 and K2 combine. For the current modelling purposes K2 takes dominance over K1 where this potential combining occurs, generally due to the mineralization in those areas exhibiting higher copper grades.

K92ML also supplied an additional mineral wireframe, known as the Kora Link, which captured some significant mineralization between the K1 and K2 Lodes. A review of the K92ML interpretation by H&SC allowed for a significantly different interpretation, i.e. the H&SC interpretation is much smaller in vertical extent, has a different strike and dip orientation and abuts both the K1 and K2 Lodes forming a link between the two. The H&SC interpretation might be considered more conservative but it was preferred in the subsequent resource modelling with an appropriate resource classification based on this uncertainty.

Figure 32 is a cross section example of the geological interpretation (section window +/-5m). The image shows the K1 Lode (red dash), the K2 Lode (green dash) and the Kora Link (purple dash). It also shows the logged lithology on the drillhole trace along with the gold (nearest to the hole trace), copper and silver grades. The yellow ellipse highlights the face sampling associated with the development drive (brown solid line shows stope outline).

An explanation of the geology codes is included as

Table 14.

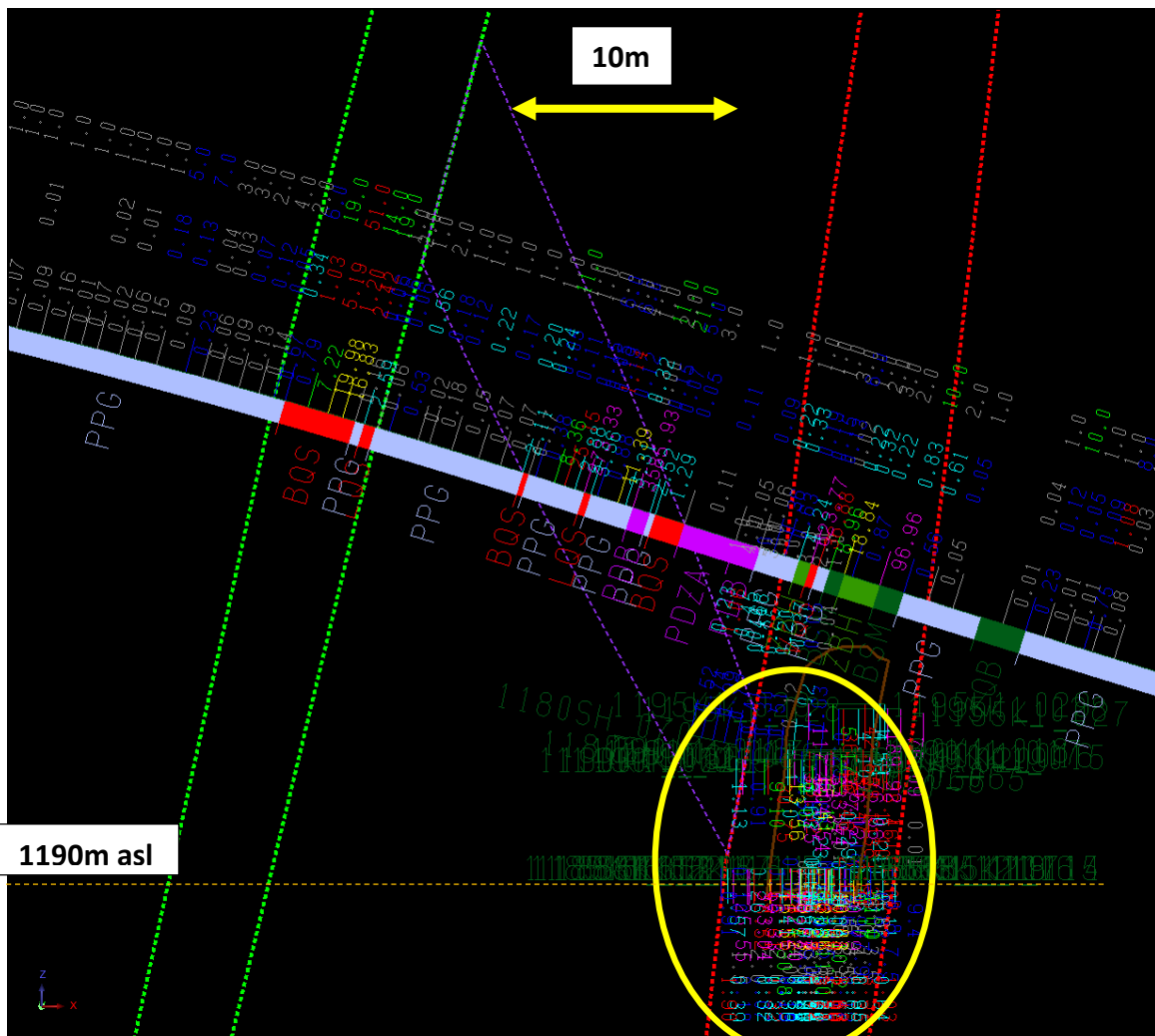
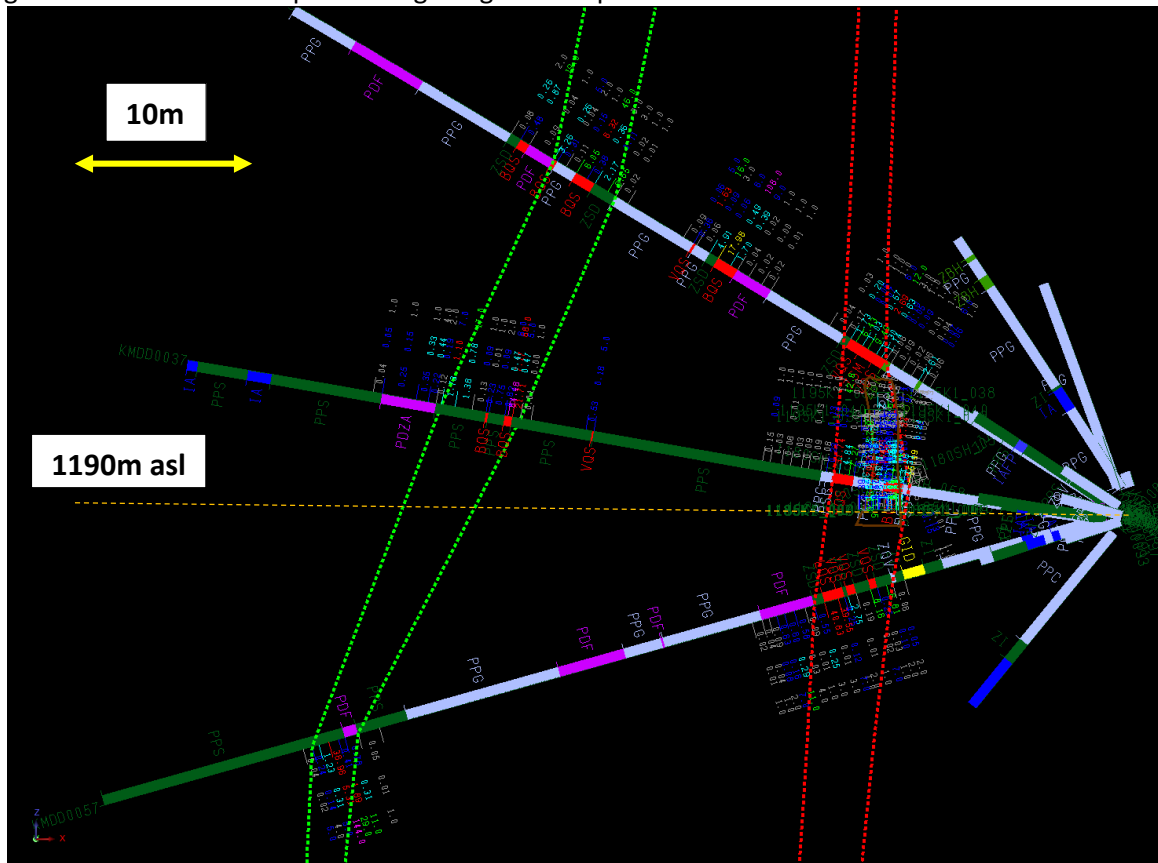


Figure 32 Geological Interpretation for Cross Section 58890mN - Drillhole KMD0084

**Table 14 : Geology Codes for Cross Sections**

Lithology			Mineralization	
PPG	Graphitic phyllite		BQS	Hydrothermal Brecciated quartz-sulphides veins
PPS	Micaceous phyllite		VQS	Vughy quartz-sulphides veins
IA	Andesite		LQS	Banded quartz-sulphides veins
GID	Diorite		BSM	Hydrothermal Brecciated massive sulphides veins
PPC	Chloritic phyllite		ZSD	Stringer or disseminated sulphides
			ZBH	Hydrothermal breccia, mineralised
Faulting			ZQV	Massive quartz vein
PDZA	Altered Shear Zone		ZQB	Quartz cement breccia
PDB	Fault gauge, fault breccia			
PDF	Fault gauge			

Figure 33 is another example of the geological interpretation of the K1 and K2 Lodes.



**Figure 33 Geological Interpretation for Cross Section 59000mN**

Figure 34 contains a range of cross sections showing geological interpretations for the K1 and K2 Lodes. The 1190m elevation is shown as an orange dash line.

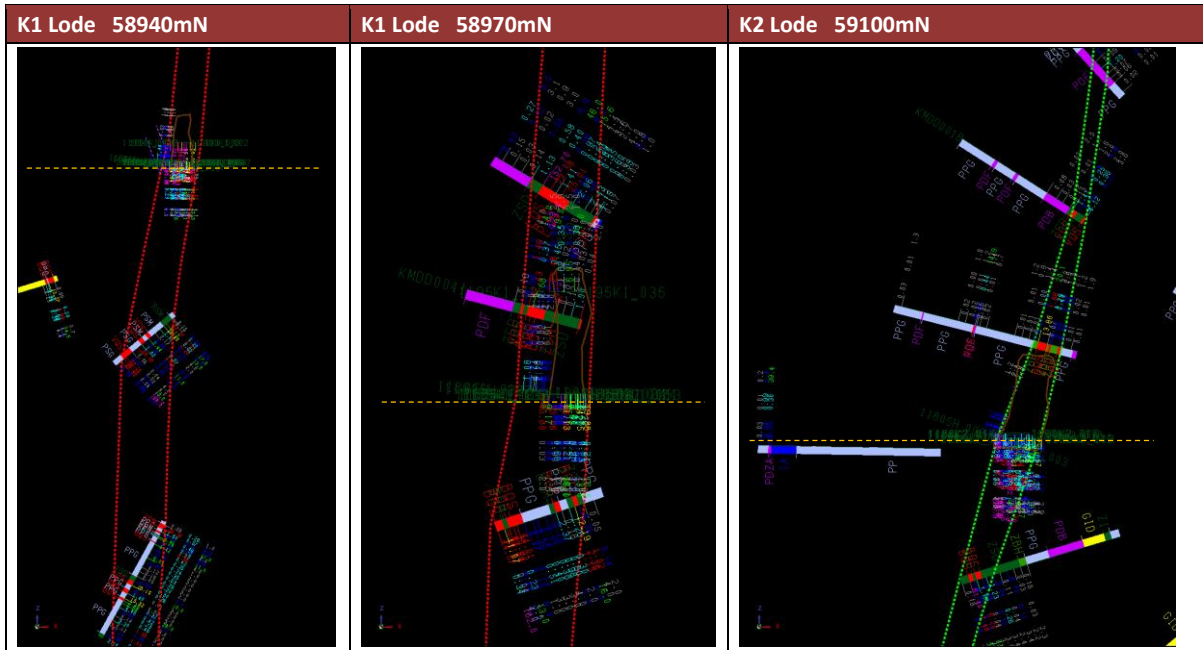


Figure 34 Further Examples of Cross Sectional Interpretations for K1 & K2 Lodes

Dimensions of the mineralization are listed in Table 15.

Table 15 : Dimensions of the Mineral Lodes

Lode	Strike (m)		Dip (m)	Ave Width (m)	Volume (m <sup>3</sup> )
K1	395		170-260	4.5	368,398
K2	520		370	4.3	832,045
Kora Link	155		60	2.0	18,069

### 14.3 DATA ANALYSIS

Sampling was under geological control with a minimum sampling width of 0.1m and a maximum of 1m. The smaller sample intervals were utilised to sample individual sub-veins/stringers and sulphide intercepts. Core was sampled to at least 5m either side of each mineral lode, including stringer style mineralization away from the lodes.

Figure 35 shows the range of sample intervals for the K1 Lode.

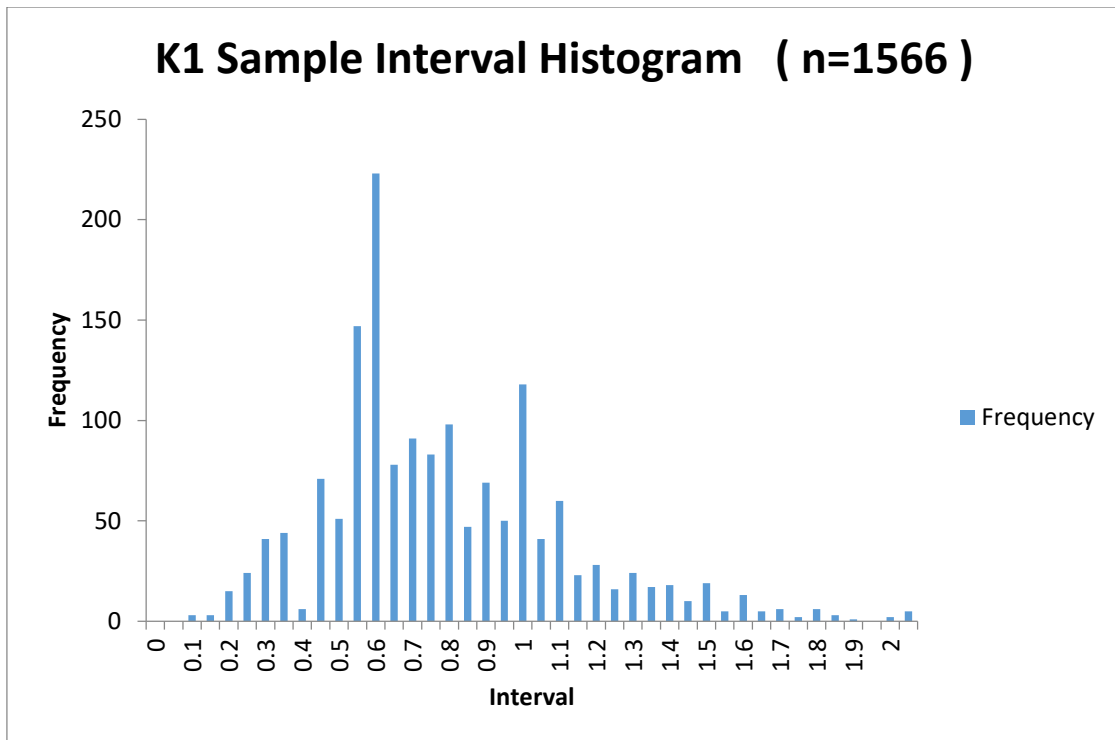


Figure 35 Sample Interval Histogram for the K1 Lode

Figure 36 shows the range of sample intervals for the K2 Lode. It is very similar to the data for the K1 Lode.

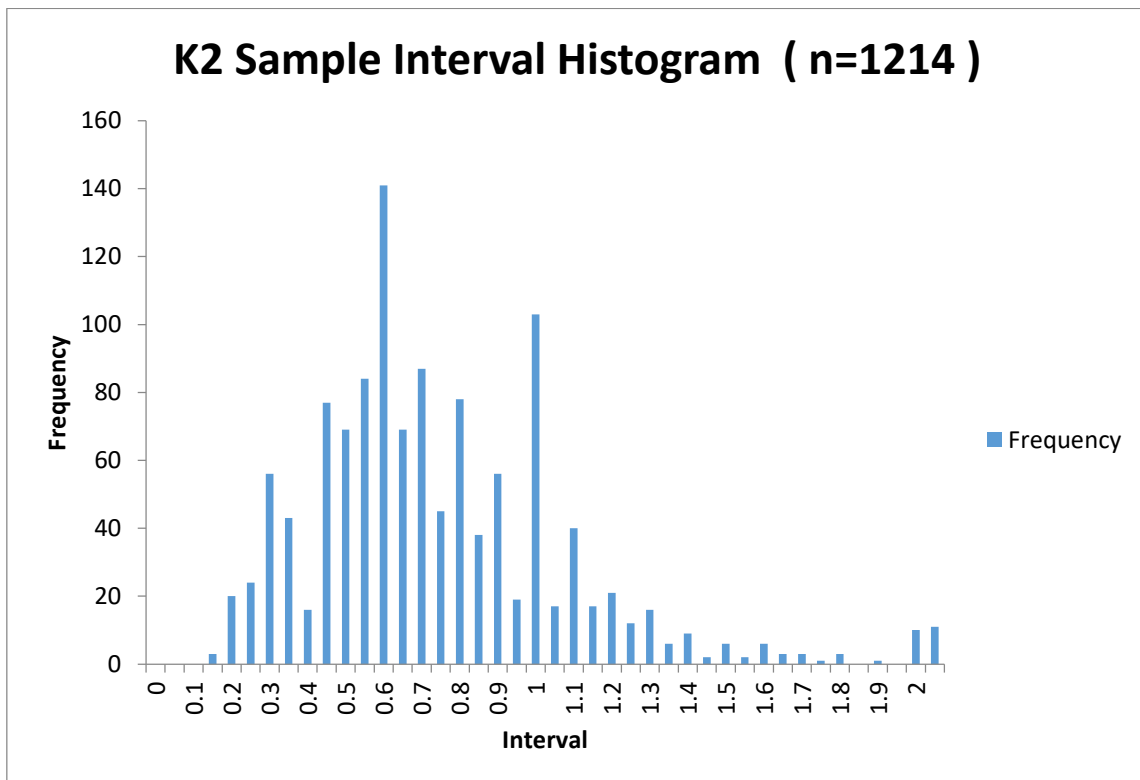
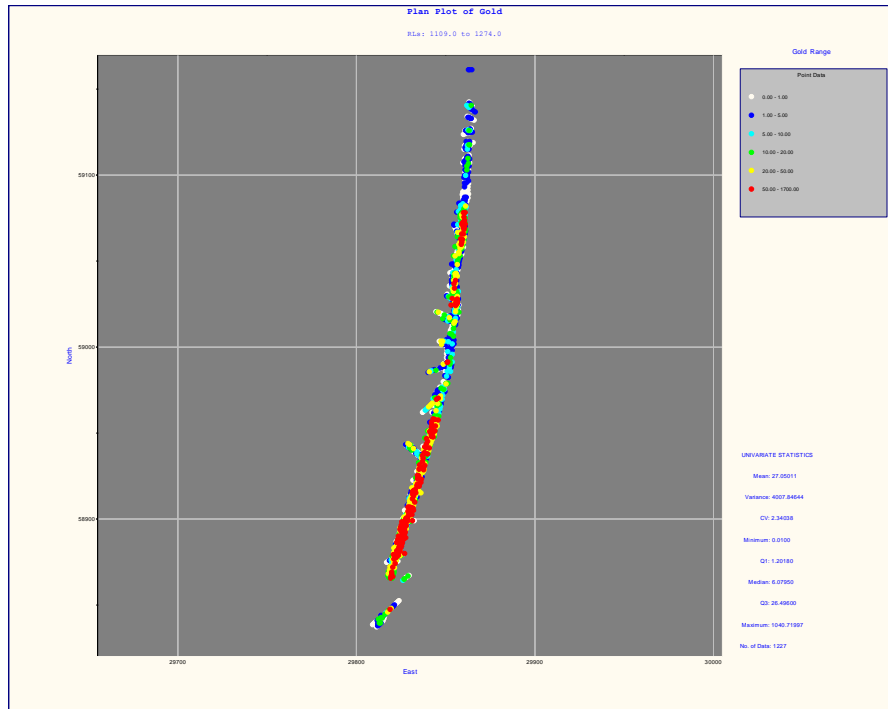


Figure 36 Sample Interval Histogram for the K2 Lode



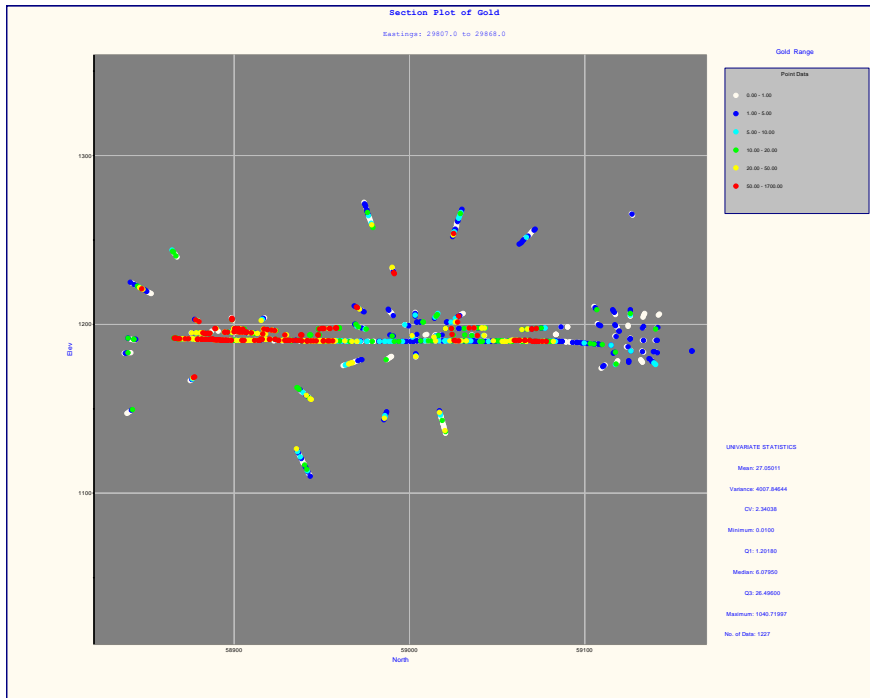
The above diagrams were used to help decide that a 1m composite interval would be appropriate for subsequent grade interpolation. The wireframes were used to generate the 1m composites within the mineralised zones with a minimum composite length of 0.4m. Each composite sample was assigned to the K1, K2 or Kora Link Lodes. A total of 2,159 composites were extracted from the drillhole & sampling database for gold, copper and silver. Data consisted of both diamond core samples and face sampling. The mineral wireframes represent hard boundaries for the grade interpolation.

Figure 37 shows the gold composite distribution in plan view for the K1 Lode. It clearly shows the high grade face sampling zone, currently being mined, and a slight flexure in the strike of the mineralization.



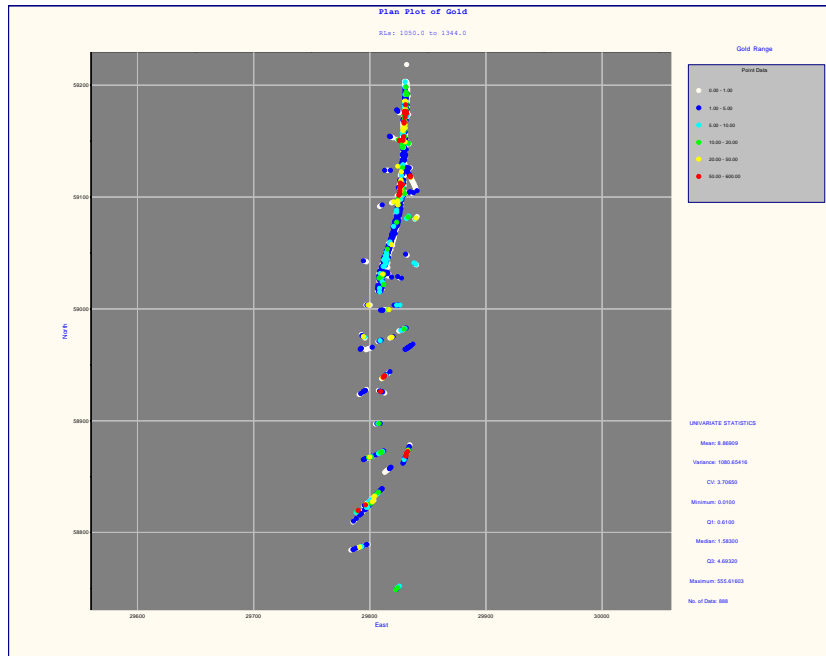
**Figure 37 Gold Composite Distribution for the K1 Lode Plan View**

Figure 38 shows the same data in long section. This figure demonstrates the relatively close-spaced nature of the sampling, which is subsequently reflected in the chosen block size and resource classification.

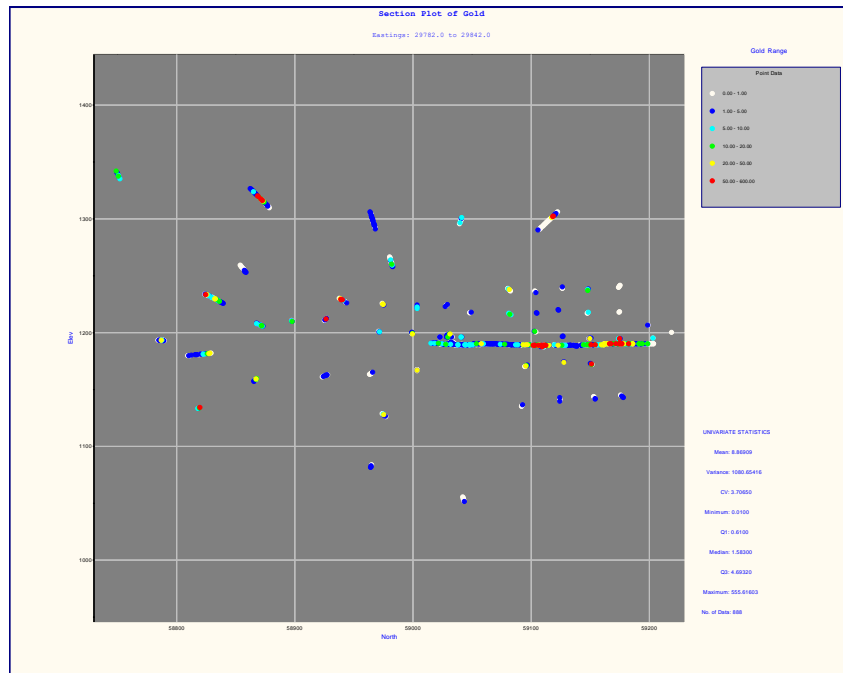


**Figure 38 Gold Composite Distribution for the K1 Lode Long Section View**

Figure 39 and Figure 40 show the same views for the K2 Lode. The grade continuity in the face sampling looks much more limited than for the K1 Lode and the distribution of the drillhole grades looks relatively more random. A bigger spread of drillhole data relative to K1 is demonstrated in the long section view (same grid dimensions).

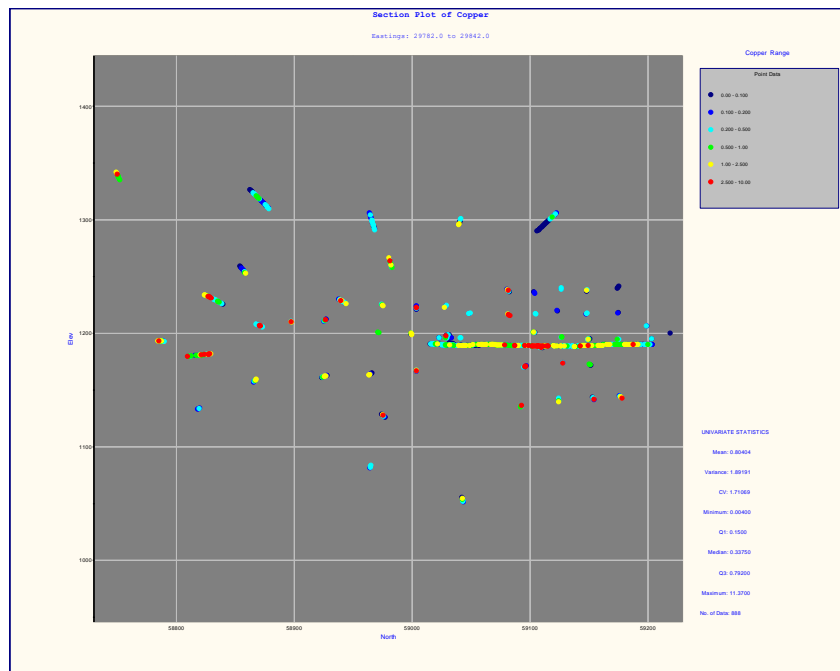


**Figure 39 Gold Composite Distribution for the K2 Lode Plan View**



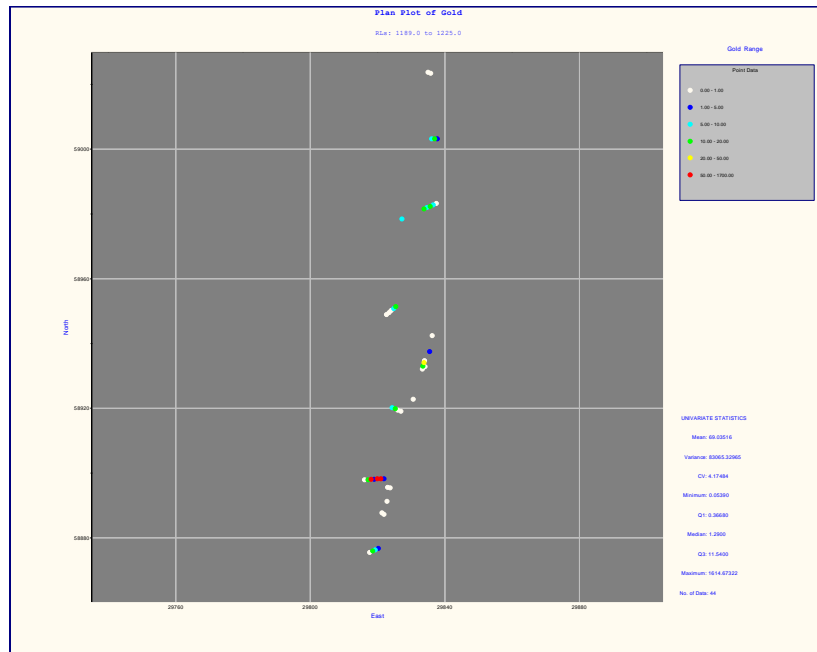
**Figure 40 Gold Composite Distribution for the K2 Lode Long Section View**

Figure 41 shows the long section view of the copper composites for the K2 Lode. A higher grade zone appears confined to the core of the drilling area.



**Figure 41 Copper Composite Distribution for the K2 Lode Long Section View**

Figure 42 shows the Kora Link gold composites in plan view. Of particular importance are the three high grade samples at the southern end of the interpreted lode, which reach up to 1,614ppm Au.



**Figure 42 Gold Composite Distribution for Kora Link Plan View**

Summary statistics for the different lodes are included below. The tables show results for the entire dataset for each lode and the split between face sampling and diamond core sampling. Also shown is the impact of applying two top cuts to the gold data, 400ppm and 200ppm, and a top cut to the silver data (50ppm for K1 and 200ppm for K2). The summary statistics for copper, particularly the relatively low coefficients of variation (“CV”=SD/mean), suggested no top cut was required.

Table 16 shows the summary statistics for the K1 Lode. There were 10 missing composite values for silver and copper that were resolved by inserting default values based on the surrounding samples; all were low grade.

**Table 16 : Summary Statistics for the K1 Lode**

All data	Gold	Gold_tc_400	Gold_tc_200	Silver	Silver_tc	Copper
Mean	27.05	26.11	23.88	6.44	5.70	0.41
Median	6.19	6.19	6.19	3.60	3.60	0.16
Mode	0.12	0.12	200	1	1	0.01
Standard Deviation	63.33	53.26	41.72	14.96	6.90	0.64
Sample Variance	4011.12	2836.70	1740.48	223.73	47.67	0.42
Coeff of Variation	2.34	2.04	1.75	2.32	1.21	1.59
Kurtosis	79.74	19.48	7.82	167.70	17.76	13.08
Skewness	7.05	4.03	2.78	11.70	3.69	3.24
Range	1040.71	399.99	199.99	257.3163	50	5.1615
Minimum	0.01	0.01	0.01	0	0	0
Maximum	1040.72	400	200	257.3163	50	5.1615
Count	1227	1227	1227	1227	1227	1227
Face Sample Data	Gold	Gold_tc_400	Gold_tc_200	Silver	Silver_tc	Copper
Mean	35.25	33.90	30.89	6.71	5.93	0.47
Median	11.776	11.776	11.776	4	4	0.19

Mode	0.77	400	200	1	1	0.05
Standard Deviation	72.61	59.99	46.66	15.79	6.79	0.72
Sample Variance	5271.87	3598.39	2177.46	249.34	46.15	0.51
Coeff of Variation	2.06	1.77	1.51	2.35	1.15	1.52
Kurtosis	62.93	13.59	5.02	179.57	17.65	10.48
Skewness	6.29	3.41	2.31	12.38	3.66	2.94
Range	1040.71	399.99	199.99	257.3063	49.99	5.1615
Minimum	0.01	0.01	0.01	0.01	0.01	0
Maximum	1040.72	400	200	257.3163	50	5.1615
Count	843	843	843	843	843	843
<b>Drillcore Data</b>	<b>Gold</b>	<b>Gold_tc_400</b>	<b>Gold_tc_200</b>	<b>Silver</b>	<b>Silver_tc</b>	<b>Copper</b>
Mean	9.05	9.01	8.49	5.85	5.19	0.27
Median	1.8125	1.8125	1.8125	2.9	2.9	0.126
Mode	0.12	0.12	0.12	1	1	0.01
Standard Deviation	27.88	27.26	20.94	12.94	7.12	0.42
Sample Variance	777.16	742.85	438.67	167.51	50.76	0.17
Coeff of Variation	3.08	3.03	2.47	2.21	1.37	1.57
Kurtosis	125.39	117.45	39.24	82.72	18.52	17.24
Skewness	9.69	9.36	5.61	8.36	3.82	3.69
Range	416.4295	399.97	199.97	148	50	3.3418
Minimum	0.03	0.03	0.03	0	0	0
Maximum	416.4595	400	200	148	50	3.3418
Count	384	384	384	384	384	384

(\_tc = top cut)

Clearly there is a difference between the gold means for the two sample types which could be used to argue against combining the datasets. However, the face sampling is from mined material and is real and it is quite evident that the drilling 'missed' this high grade zone. The data also shows relatively low CVs for all elements which might be considered a little surprising considering the type of mineralization but indicates a lack of skewed data and possibly a very limited number of data outliers and/or represents a single population. The impact of applying the 200ppm top cut for gold is reasonably significant as it affected thirty samples, with a 12% drop in the overall mean value, whilst for silver the impact of the 50ppm top cut was nine samples and a 10% drop in the overall mean grade. The gold top-cutting affected the face sampling mean more than the drillcore mean. H&SC has concluded that it is reasonable to combine both datatypes providing other modelling parameters were appropriate.

H&SC prefers to apply minimal top cuts to composite data as firstly applying top cuts adjusts real data and secondly often the threshold is arbitrarily decided without any statistical or geological validity. H&SC prefers to control any potential higher grade outliers through judicious use of the composite interval, grade interpolation parameters, block size and the geological interpretation.

The modelling involved using both the uncut and cut (\_tc suffix) data to get a measure of the sensitivity of the resource estimates to high grade samples.

There is no correlation between the three elements.

Table 17 shows the summary statistics for the K2 Lode. There were 18 missing composite values for silver and 23 for copper which was resolved by inserting default values based on the surrounding samples; all were low grade.

This time there is relatively little difference between the gold, silver and copper means for both datatypes, which suggest that the datatypes can be combined. The impact of applying the 200ppm top cut for gold for combined datatypes is reasonably significant as it affected four samples, with a 10% drop in the overall mean value, whilst for silver the impact of the top cut was six samples and a 10% drop in the overall mean grade. The gold top-cutting affected the drillhole sampling mean more than the face sampling mean. The data also shows relatively low CVs for all elements for the face sampling but generally higher CVs for the drilling especially gold and silver. This would point to skewed data but with the application of the 200ppm gold and 200ppm silver top cuts the CVs are greatly reduced suggesting that using uncut data would have a limited negative effect on the outcomes of the grade interpolation providing other modelling parameters were appropriate.

**Table 17 : Summary Statistics for the K2 Lode**

All Data	Gold	Gold_tc_400	Gold_tc_200	Silver	Silver_tc	Copper
Mean	8.87	8.62	7.96	18.44	16.94	0.80
Median	1.58	1.58	1.58	7.31	7.31	0.34
Mode	0.65	0.65	0.65	1	1	0.01
Standard Deviation	32.89	29.26	21.98	48.12	27.19	1.38
Sample Variance	1081.87	856.18	483.27	2315.53	739.08	1.89
Coeff of Variation	3.71	3.39	2.76	2.61	1.60	1.71
Kurtosis	143.94	99.58	36.83	327.27	19.66	18.45
Skewness	10.59	8.83	5.57	15.29	3.96	3.91
Range	555.606	399.99	199.99	1129.31	199.9	11.366
Minimum	0.01	0.01	0.01	0.1	0.1	0.004
Maximum	555.616	400	200	1129.41	200	11.37
Count	888	888	888	888	888	888
Face Sample Data	Gold	Gold_tc_400	Gold_tc_200	Silver	Silver_tc	Copper
Mean	7.54	7.54	7.46	16.98	16.84	0.74
Median	1.63	1.63	1.63	8.00	8.00	0.36
Mode	0.65	0.65	0.65	12	12	0.01
Standard Deviation	20.04	20.04	19.20	24.81	23.61	1.20
Sample Variance	401.62	401.62	368.72	615.69	557.35	1.45
Coeff of Variation	2.66	2.66	2.57	1.46	1.40	1.62
Kurtosis	46.78	46.78	34.00	29.06	17.97	29.55
Skewness	5.89	5.89	5.22	4.37	3.64	4.66
Range	238.586	238.586	199.98	266.36	199.42	11.36
Minimum	0.02	0.02	0.02	0.58	0.58	0.01
Maximum	238.606	238.606	200	266.94	200	11.37
Count	498	498	498	498	498	498
Drillhole Data	Gold	Gold_tc_400	Gold_tc_200	Silver	Silver_tc	Copper
Mean	10.56	10.00	8.59	20.31	17.07	0.88
Median	1.45	1.45	1.45	6.33	6.33	0.31
Mode	0.01	0.01	0.01	1	1	0.01
Standard Deviation	44.14	37.89	25.10	66.99	31.19	1.57
Sample Variance	1948.62	1435.74	630.17	4487.02	973.12	2.46
Coeff of Variation	4.18	3.79	2.92	3.30	1.83	1.78
Kurtosis	97.09	74.82	34.29	197.11	18.19	11.55

Skewness	9.22	8.11	5.54	12.61	3.97	3.29
Range	555.606	399.99	199.99	1129.31	199.9	8.9825
Minimum	0.01	0.01	0.01	0.1	0.1	0.004
Maximum	555.616	400	200	1129.41	200	8.9865
Count	390	390	390	390	390	390

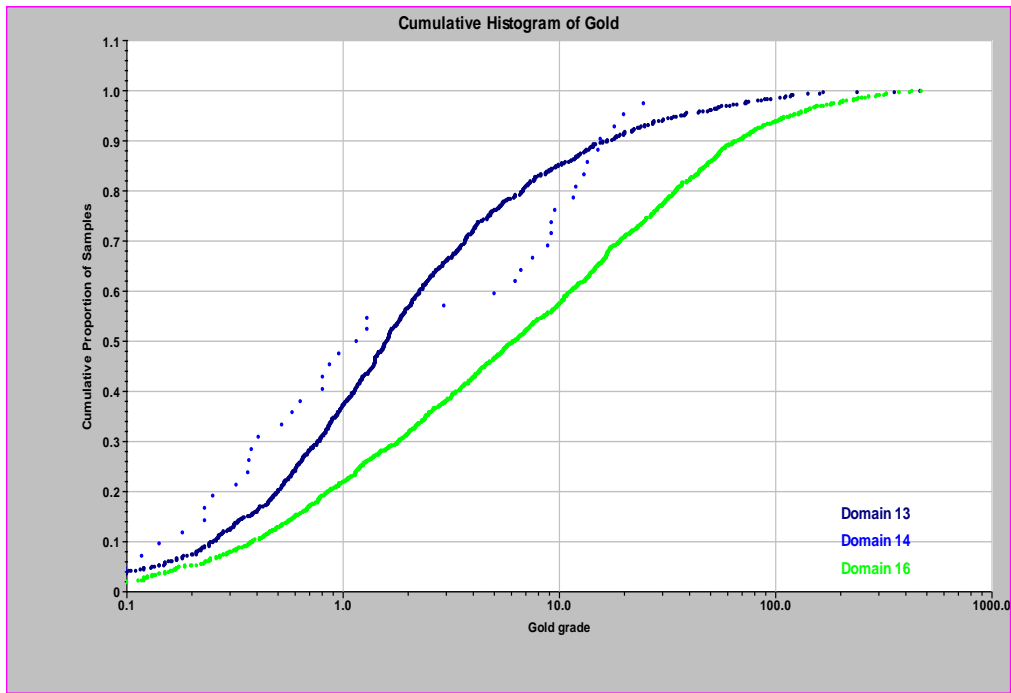
There is no correlation between the three elements.

Table 18 shows the summary statistics for the Kora Link. The most obvious features are the small number of samples and the major impact of applying the 200ppm gold top cut, which reduces the mean gold value from 69ppm to 16ppm but has a relatively limited effect on the CV. This suggests skewed data and perhaps implies more than one population is present. This indicates that considerable care needs to be exercised when reporting the resource estimates for the Kora Link.

**Table 18 : Summary Statistics for the Kora Link**

All Data	Gold	Gold_tc_400	Gold_tc_200	Silver	Copper
Mean	69.04	25.14	16.05	14.27	0.55
Median	1.29	1.29	1.29	3.00	0.27
Mode	0.23	0.23	0.23	3	1.02
Standard Deviation	291.54	83.89	42.88	24.31	0.92
Sample Variance	84997.26	7036.71	1838.48	591.14	0.85
Coeff of Variation	4.22	3.34	2.67	1.70	1.67
Kurtosis	22.36	18.12	15.10	6.05	15.27
Skewness	4.75	4.34	3.93	2.48	3.80
Range	1614.619	399.9461	199.9461	107.5	4.8684
Minimum	0.0539	0.0539	0.0539	0.5	0.0116
Maximum	1614.673	400	200	108	4.88
Count	44	44	44	44	44

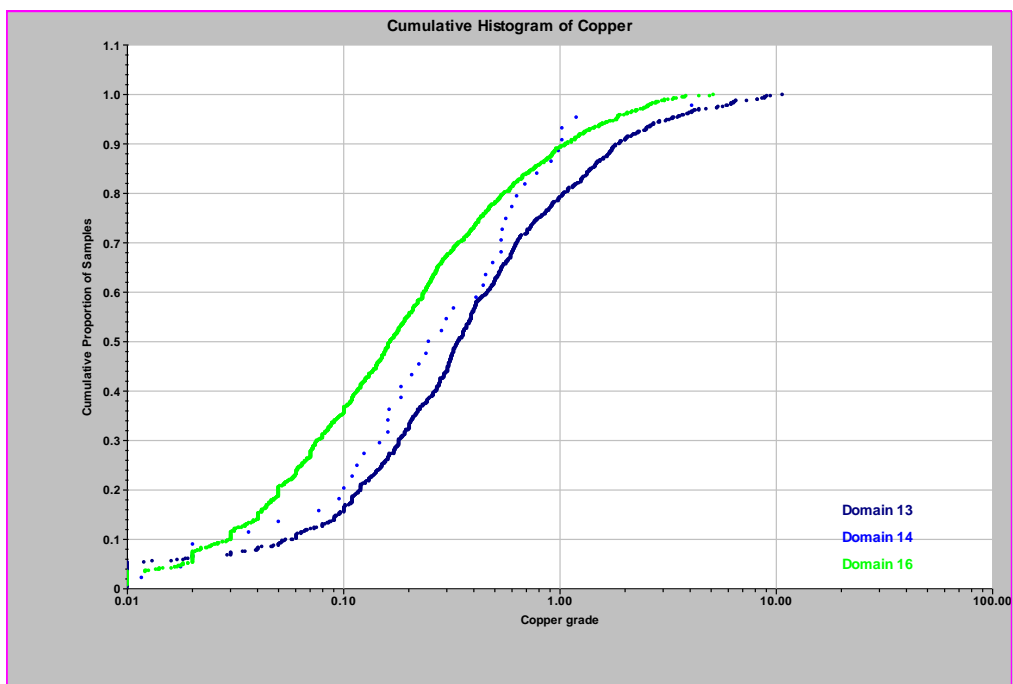
Figure 43 shows cumulative frequency plots for the gold composites for all three lodes. The curves show that the K1 and K2 Lodes are different and that K1 has a much higher gold grade which is due to the K1 face sampling. The lack of distinct gradient changes to the curves suggests a single population for each lode, hence the relatively low CV values. The figure also shows the low number of data for the Kora Link and perhaps indicates some bimodality to the dataset.



(domain 16 = K1 Lode; domain 13 = K2 Lode; domain 14 =Kora Link)

**Figure 43 All Lodes Gold Composites Cumulative Frequency Curves**

Figure 44 shows cumulative frequency plots for the copper composites for all three lodes. The curves suggest single populations for each of the two main lodes with the Kora Link looking to have more affinity with the K2 Lode at lower grade levels.

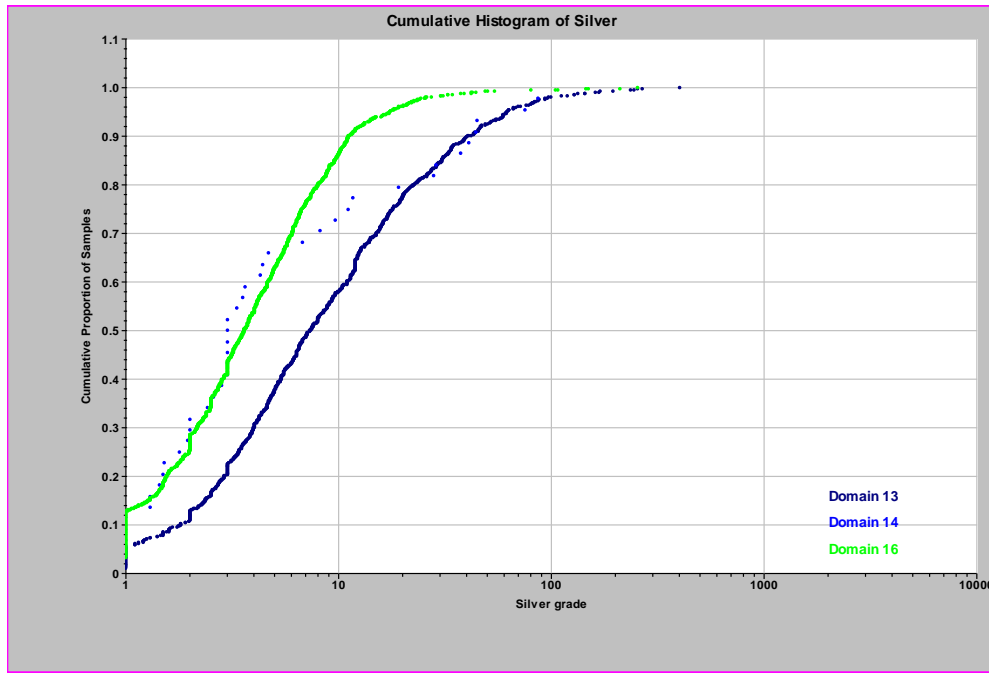


(domain 16 = K1 Lode; domain 13 = K2 Lode; domain 14 =Kora Link)

**Figure 44 All Lodes Copper Composites Cumulative Frequency Curves**

Figure 45 shows cumulative frequency plots for the silver composites for all three lodes. The curves suggest single populations for each of the two main lodes with K2 being higher grade than K1. The Kora Link looks to have more affinity with the K1 Lode at the lower grade levels but resembles K2 at higher grades.





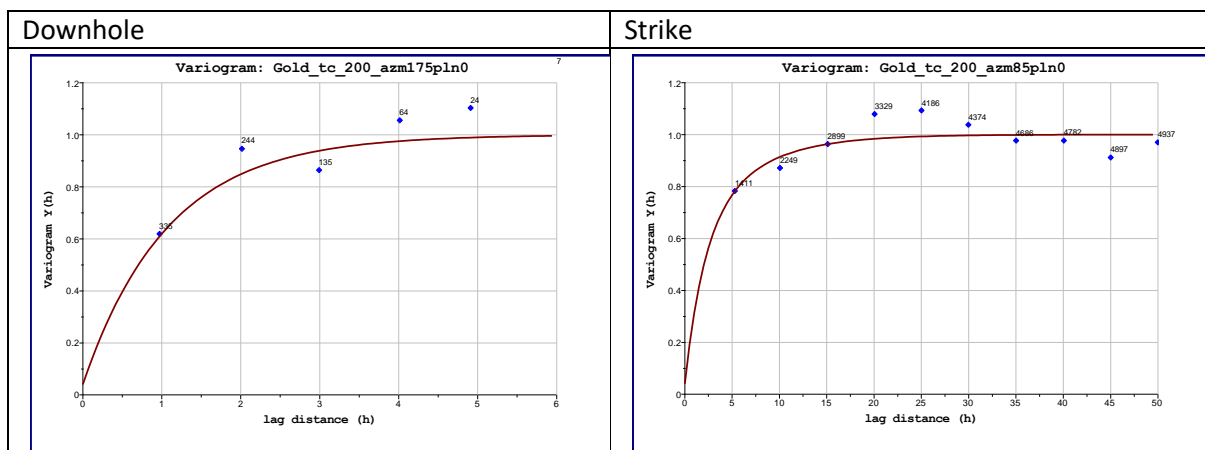
(domain 16 = K1 Lode; domain 13 = K2 Lode; domain 14 =Kora Link)  
**Figure 45 All Lodes Silver Composites Cumulative Frequency Curves**

The above data indicate that the inclusion of the face sampling data with the drilling data is reasonable. The combination of face sampling and diamond core sampling seems to be confirmed as a single population i.e. relatively unskewed data, for each of the K1 and K2 Lodes and that the Kora Link appears to be a hybrid of the two lodes.

#### 14.4 VARIOGRAPHY

Variography was completed on the composite data to ascertain grade continuity. General comments are that the downhole and down dip variography were weak to moderate with the along strike direction being moderate, mainly due to the face sampling.

Figure 46 shows the orthogonal variograms and the resulting 3D variogram model for the gold composites of the K1 Lode. The longer vertical extent relative to the shorter horizontal extent is due to a combination of the finite length of the high grade zone in the face sampling and the wider spaced diamond drilling north of this high grade zone.



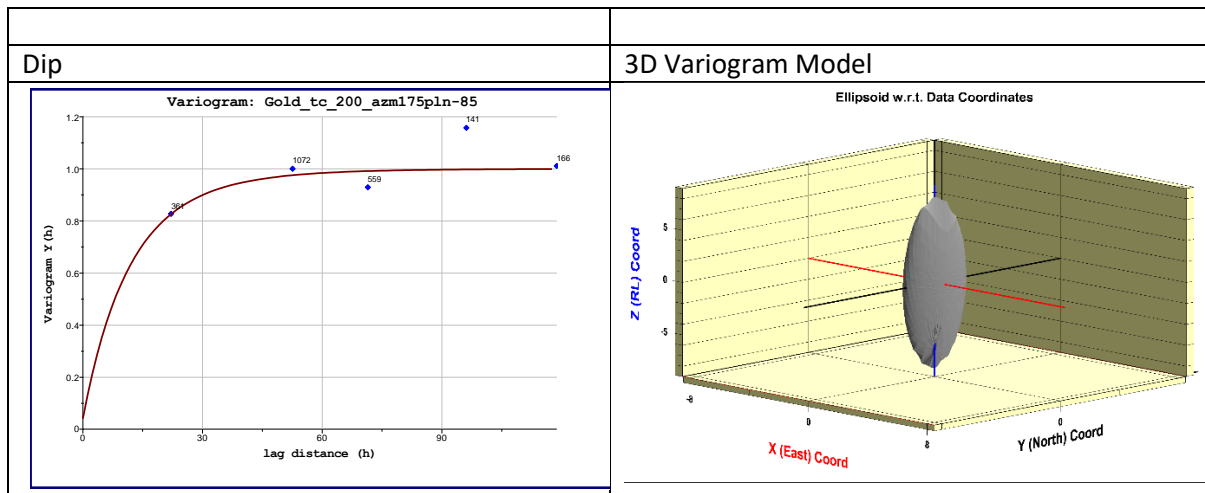


Figure 46 Selected Variograms & Variogram Model for the K1 Gold (200ppm top cut)

Table 19 shows an example of the variogram models for the three elements of the K1 Lode.

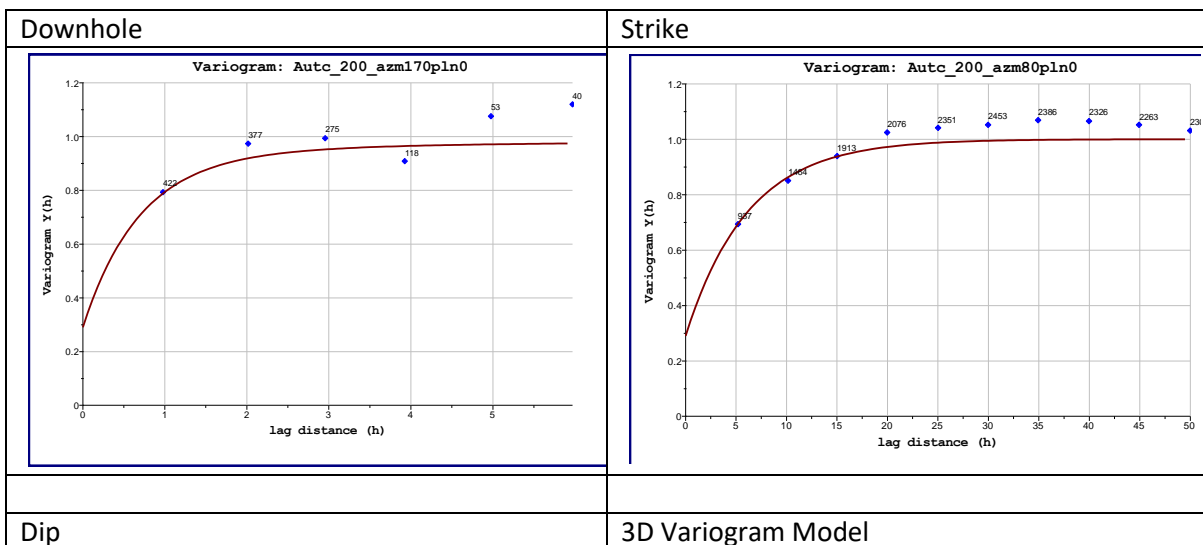
Table 19 : Variogram Models for the K1 Lode All Elements

		Kora North K1				
Metal		Nugget	c1	c2	c3	
Gold	type		exp	exp	exp	
K1	variance	0.04	0.53	0.41	0.02	
Domain 21	range - X		3	3.5	4.5	
	range - Y		6	18	25	
	range - Z		30.5	53	114	
	Z Rotation					-5
	Y Rotation					4
	X Rotation					3
Copper	type		exp	exp	exp	
K1	variance	0.008	0.74	0.21	0.042	
Domain 21	range - X		2.5	3	4	
	range - Y		11	12	53	
	range - Z		9	12	18	

Kora North K1						
	Z Rotation					-5
Metal		Nugget	c1	c2	c3	
	Y Rotation					0
	X Rotation					3
Silver	type		exp	exp	exp	
K1	variance	0.16	0.78	0.045	0.015	
Domain 21	range - X		3.5	20	48	
	range - Y		10	12	301	
	range - Z		35.5	73	228	
	Z Rotation					-5
	Y Rotation					5
	X Rotation					3

(trigonometrical convention for rotations)

Figure 47 shows the orthogonal variograms and the resulting 3D variogram model for the gold composites of the K2 Lode. The lower level of anisotropy in the axes is considered a reasonable reflection of the gold grade distribution.



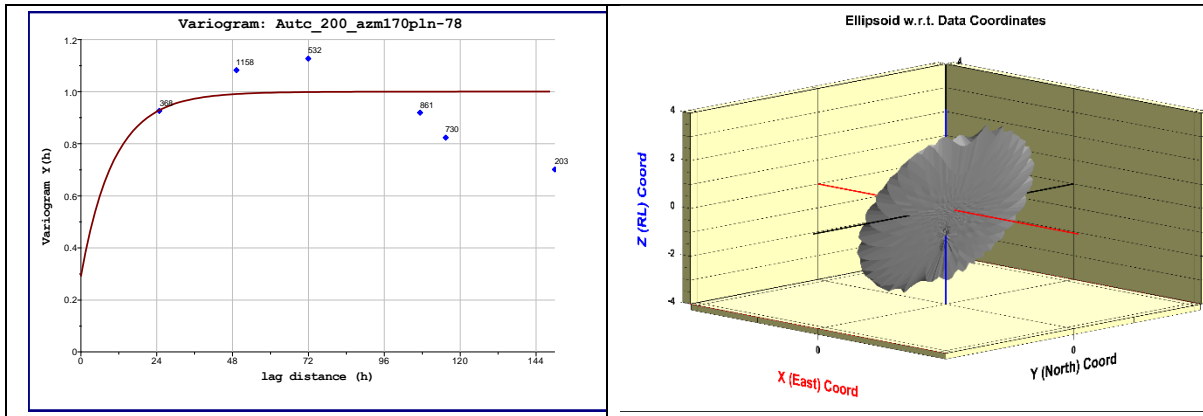


Figure 47 Selected Variograms & Variogram Model for the K2 Gold (200ppm top cut)

Figure 48 shows the orthogonal variograms and the resulting 3D variogram model for the copper composites of the K2 Lode. Again the lower level of anisotropy in the axes is considered a reasonable reflection of the copper grade distribution.

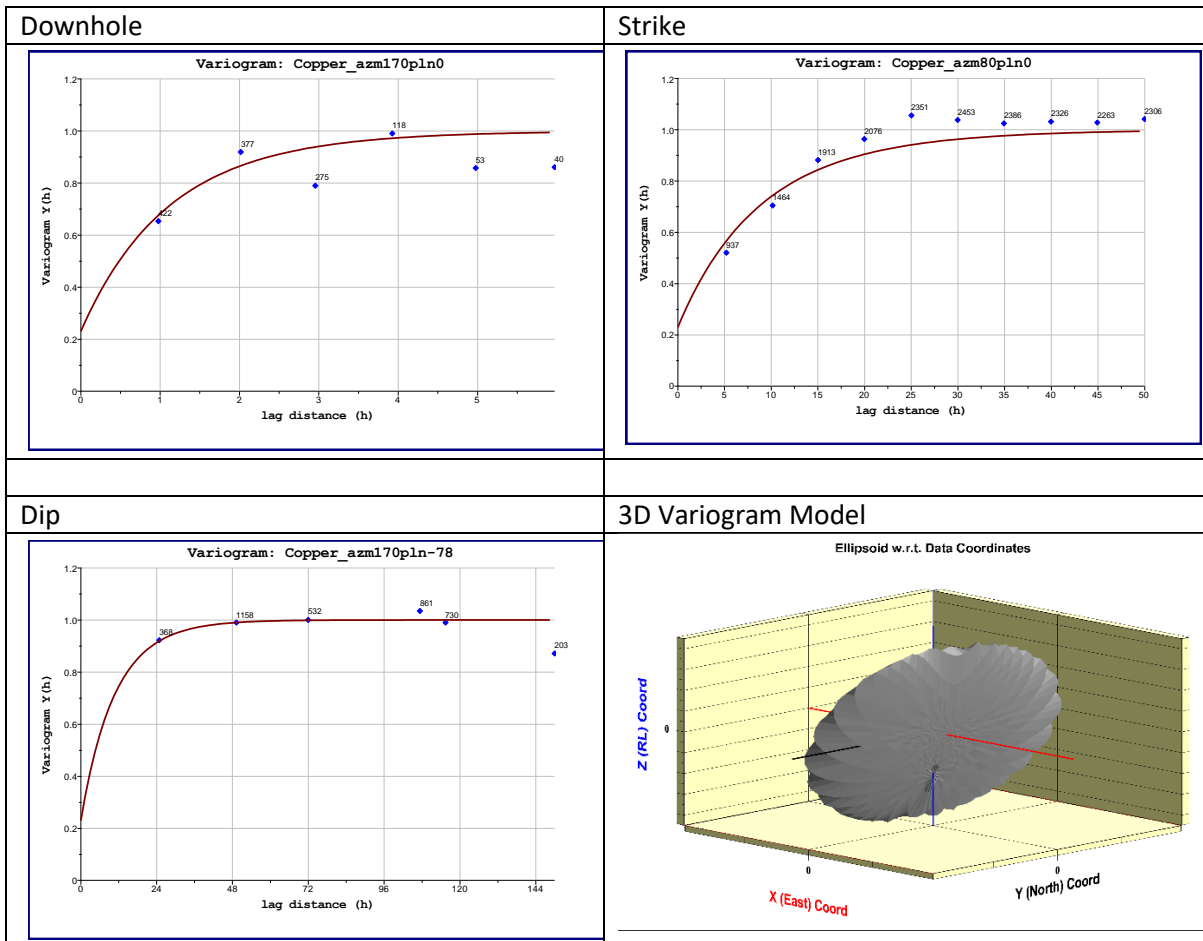


Figure 48 Selected Variograms & Variogram Model for the K2 Copper

Table 20 shows an example of the variogram models for the three elements of the K2 Lode.

**Table 20 : Variogram Models for the K2 Lode All Elements**

Metal		Kora North K2				
		Nugget	c1	c2	c3	
Gold	type		exp	exp	exp	
K2	variance	0.29	0.63	0.059	0.021	
	range - X		2	8	211	
	range - Y		30.5	54	69	
	range - Z		18.5	19	20	
	Z Rotation					-11
	Y Rotation					12
	X Rotation					81
Copper	type		exp	exp	exp	
K2	variance	0.23	0.21	0.15	0.41	
	range - X		2.5	3	4	
	range - Y		19.5	25	37	
	range - Z		25	33	37	
	Z Rotation					-8
	Y Rotation					12
	X Rotation					0
Silver	type		exp	sph	sph	
K2	variance	0.17	0.78	0.026	0.024	
	range - X		2	3	4	
	range - Y		22.5	28	29	
	range - Z		17.5	43	52	
	Z Rotation					-11
	Y Rotation					7
	X Rotation					-28

*(trigonometrical convention for rotations)*

#### 14.5 BLOCK MODEL DETAILS

A 1m by 5m by 5m N-S oriented block model was created with the block size mainly in deference to the close spaced drilling for the K1 Lode and the face sampling. Details of the Surpac block model are included in Table 21.

**Table 21 : Block Models Details**

Block Model Summary	Kora OK Block Model		
Block model:kora_ok_working_tc_231018.mdl			
Type	X	Y	Z
Minimum Coordinates	29740.5	58602.5	1002.5
Maximum Coordinates	29900.5	59507.5	1502.5
User Block Size	1	5	5
Min. Block Size	1	5	5
Rotation	0	0	0
Discretisation	2	4	4

#### 14.6 BLOCK GRADE INTERPOLATION

Grade interpolation was undertaken using the OK option from H&SC's in-house GS3 software. The resulting models were then loaded into a Surpac block model for post-modelling processing and resource reporting. The interpolation strategy consisted of five search passes each with increasing search radii and/or decreasing number of octants and/or decreasing minimum number of data. Details of the search pass parameters are listed in Table 22.

**Table 22 : Search Ellipse Parameters**

Pass No	X radius (m)	Y radius (m)	Z radius (m)	Min Data	Min Octants	Max Data
1	2	25	25	12	4	32
2	4	50	50	12	4	32
3	4	75	75	12	4	32
4	5.25	100	100	12	4	32
5	5.25	100	100	6	2	32

There are subtle variations in the dip and strike of both the K1 and K2 Lodes that necessitated the insertion of separate search sub-domains into the block model. These were created by designing wireframe surfaces to subdivide areas of the block model for the two main mineral lodes, based on dip and strike changes. Two search sub-domains, labelled 21 (& 23 – same orientation as 21) and 22, were used for the grade interpolation for K1 reflecting the modest change in dip and strike of the lode. Four search sub-domains were used for K2, labelled 31, 32, 33 & 34, again reflecting the modest changes in dip and strike of the lode. All sub-domains had soft boundaries with respect to the grade interpolation.

Figure 49 shows the search sub-domains 21 (blue), 22 (green) and 23 (magenta) for the K1 Lode. Domains 21 and 23 are actually the same orientation and suggest some form of sigmoidal structure associated with the lode.

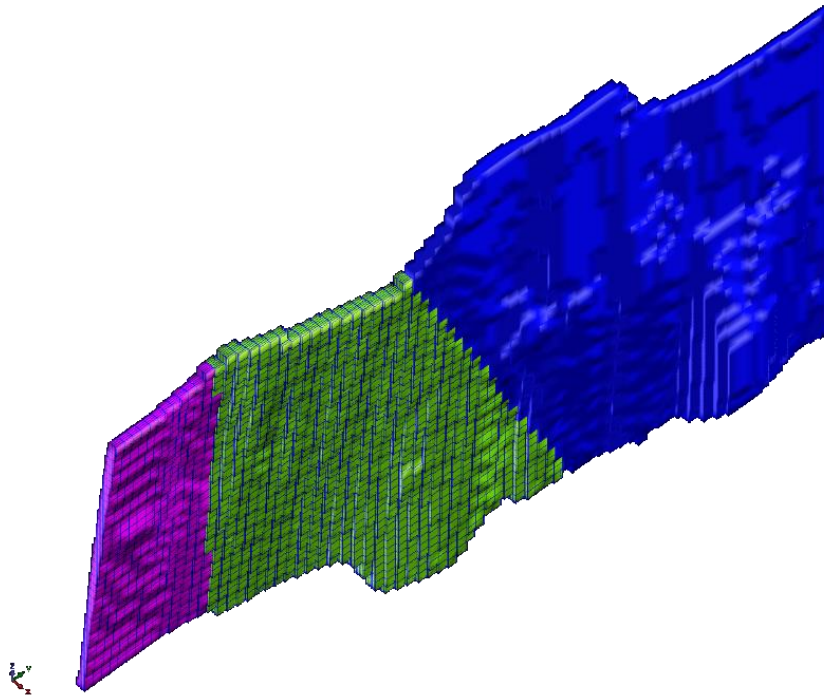


Figure 49 K1 Lode Search Domains

Figure 50 shows search sub-domains 31 (blue), 32 (green), 33 (orange) and 34 (magenta) for the K2 Lode.

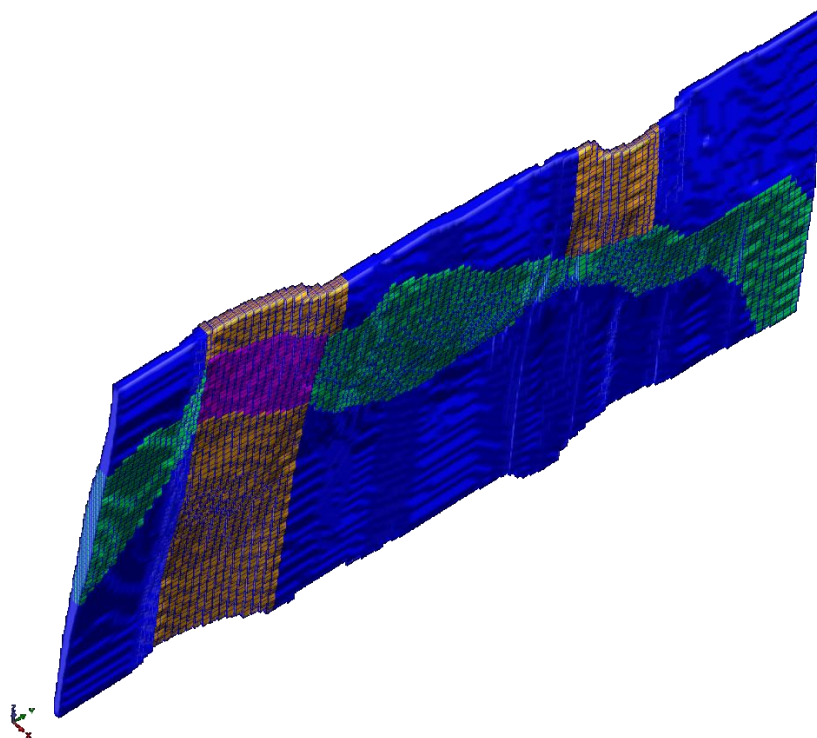


Figure 50 K2 Lode Search Domains

Again there is the suggestion of a sigmoidal structure associated with the lode.

Details of the search rotations are included in Table 23.

**Table 23 : Search Ellipse Rotations**

Lode	Search Domain	Rotations		
		X	Y	Z
K1	21 (& 23)	0	3	-5
K1	22	0	7	-15
K2	31	0	5	-5
K2	32	0	15	-5
K2	33	0	5	-15
K2	34	0	15	-15
Kora Link		0	-25	-10

(trigonometric convention)

Estimated blocks for individual lodes were imported into the block model using the partial percent volume adjustment field for each of the lodes. This allows for reporting the resource for each lode either as block centroids within the interpreted lode wireframe (in/out method) or with a partial percent volume adjustment method. The differences in the reported resources from the two methods were not considered significant, so both options can be used for reporting resources.

A set of combined lode attributes was created to facilitate the amalgamation of gold, silver and copper grades plus density and pass categories for each of the three lodes. This amalgamation was achieved by using the block centroid within the relevant interpreted mineral lode. There may be some minor difference in reporting resources from the combined attributes relative to individual reporting of each lode, but it is not considered significant.

Density data was supplied by K92ML (Table 24). The Archimedes Method, i.e. weight in air weight/in water measurements, was used on selected pieces of core for the different lodes. There is a risk to this method in that often there is a bias towards selecting more competent pieces of core, and vuggy core or areas of poor recovery are not factored in. This data included a partial separation of the K1 data into K1E and K1W Lodes.

**Table 24 : Summary of Density Measurements**

Lode	No	Range		
		Low	High	Averages
K2	24	2.0	3.6	2.70
K1	49	2.2	3.6	2.77
K1E	31	2.2	3.6	2.81
K1W	15	2.3	3.7	2.78
Total	119			
			Wt Ave	2.77

The results from the K92ML work show an average density of 2.8t/m<sup>3</sup> for K1 and 2.7t/m<sup>3</sup> for K2 (rounded to one decimal place). Some of K92ML personnel have queried the data suspecting the



average values are too low based on historical work for other deposits at Kainantu. An alternative of 2.9t/m<sup>3</sup> has been put forward, especially for the K2 Lode as it has a higher copper sulphide content. H&SC suggests that more work is needed to confirm the accuracy of the density values but for reporting the current resources it is using a default value of 2.8t/m<sup>3</sup> for all material. K92ML has informed H&SC that this was the value used by Barrick for the main Kora deposit.

#### 14.7 ESTIMATION RESULTS

Estimation results are reported for the different lodes and their pass categories in Table 25. The estimation results are reported for all block centroids inside the mineral wireframe (in/out basis) for a zero gold cut-off grade with depletion from mining up to September 2018 removed.

Observations of the results include:

1. The effect of the gold 200ppm top cut for the K1 Lode is a bit under a 10% drop in gold grade with a slightly bigger drop of 13% associated with the 50ppm top cut for the silver grade.
2. The effect of the gold 200ppm top cut for the K2 Lode is a bit under a 15% drop in gold grade with a slightly smaller drop of 10% associated with the 200ppm top cut for the silver grade.
3. The effect of the gold 200ppm top cut (and the 400ppm cut) for the Kora Link is dramatic with a 77% drop in gold grade and a drop of only 10% associated with the 200ppm top cut for the silver grade.

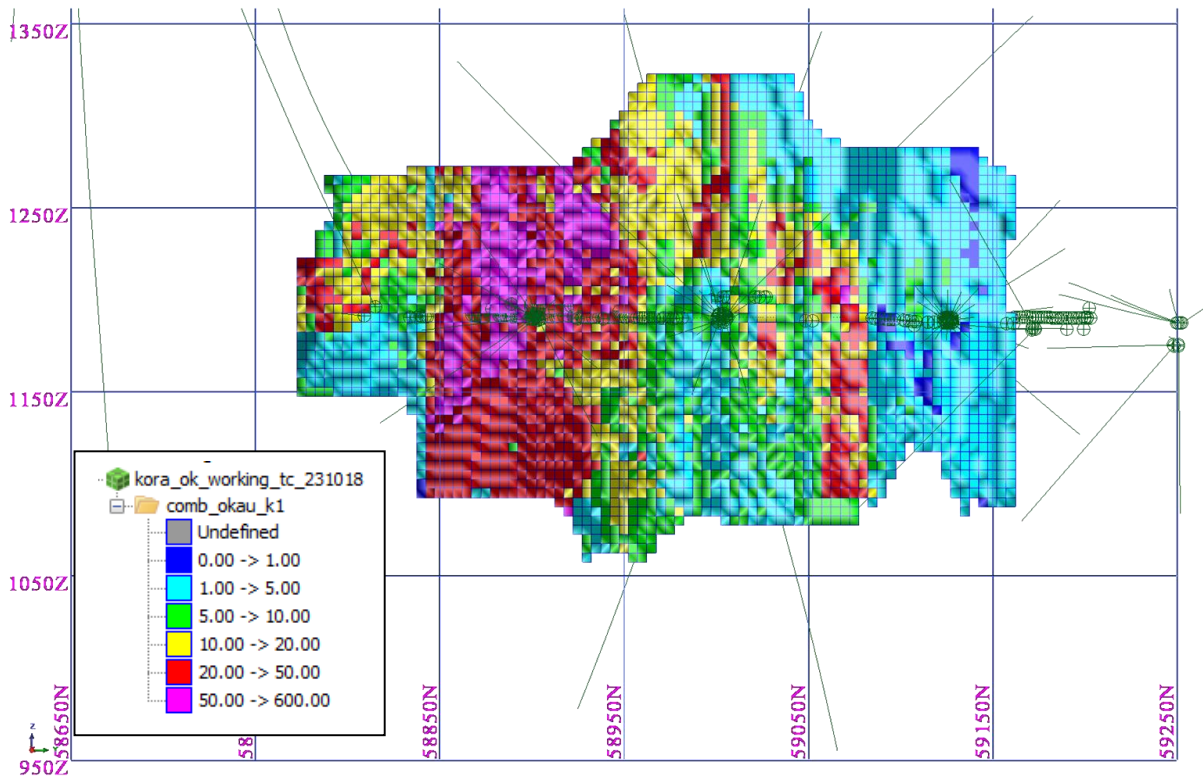
Table 25 : Estimation Results

Lode	Pass	Volume	Tonnes	Au g/t	Autc_400 g/t	Autc_200 g/t	Ag ppm	Ag_tc ppm	Cu %
K1	Pass 1	42,450	118,860	21.63	20.88	19.33	6.7	5.9	0.35
	Pass 2	104,450	292,460	17.16	16.84	15.65	5.8	5.3	0.33
	Pass 3	41,375	115,850	17.50	17.44	16.10	5.8	5.4	0.43
	Pass 4	23,000	64,400	18.33	18.24	16.93	5.1	4.8	0.37
	Pass 5	121,150	339,220	12.78	12.76	12.11	4.5	4.4	0.31
<b>Sub Total</b>		<b>332,425</b>	<b>930,790</b>	<b>16.26</b>	<b>16.04</b>	<b>14.97</b>	<b>5.4</b>	<b>5.0</b>	<b>0.34</b>
K2	Pass 1	12,725	35,630	9.13	8.85	8.31	28.2	18.8	0.83
	Pass 2	143,675	402,290	7.54	7.48	7.32	24.5	20.4	1.09
	Pass 3	125,850	352,380	8.85	8.52	7.76	21.6	19.5	0.90
	Pass 4	88,075	246,610	10.50	9.77	8.29	18.6	17.4	0.76
	Pass 5	267,825	749,910	8.57	7.99	6.86	15.3	14.8	0.84
<b>Sub Total</b>		<b>638,150</b>	<b>1,786,820</b>	<b>8.67</b>	<b>8.24</b>	<b>7.37</b>	<b>19.3</b>	<b>17.5</b>	<b>0.89</b>
Kora Link	Pass 2	6,700	18,760	97.56	33.13	19.84	9.0	9.0	0.54
	Pass 3	2,850	7,980	48.07	18.58	12.47	18.9	18.9	0.56
	Pass 4	1,375	3,850	30.49	13.54	10.51	24.6	24.6	0.51
	Pass 5	7,400	20,720	61.32	22.30	14.43	18.2	18.2	0.79
<b>Sub Total</b>		<b>18,325</b>	<b>51,310</b>	<b>70.19</b>	<b>25.02</b>	<b>15.81</b>	<b>15.4</b>	<b>15.4</b>	<b>0.64</b>
<b>Total</b>		<b>988,900</b>	<b>2,768,920</b>	<b>12.36</b>	<b>11.17</b>	<b>10.08</b>	<b>14.6</b>	<b>13.2</b>	<b>0.70</b>

Lode	Pass	Au ozs	Autc_400 ozs	Autc_200 ozs	Ag ozs	Agtc_ozs	Cu T
K1	Pass 1	82,678	79,785	73,861	25,679	22,648	415
	Pass 2	161,389	158,323	147,123	54,317	49,568	971
	Pass 3	65,204	64,958	59,974	21,531	20,242	495
	Pass 4	37,959	37,768	35,051	10,513	9,848	237
	Pass 5	139,418	139,157	132,099	49,378	47,905	1,035
	<b>Sub Total</b>	<b>486,645</b>	<b>480,000</b>	<b>448,096</b>	<b>161,437</b>	<b>150,213</b>	<b>3,155</b>
K2	Pass 1	10,456	10,138	9,520	32,262	21,499	297
	Pass 2	97,520	96,770	94,687	317,098	264,464	4,369
	Pass 3	100,253	96,480	87,914	244,332	221,467	3,161
	Pass 4	83,276	77,480	65,768	147,268	137,673	1,867
	Pass 5	206,551	192,541	165,390	368,276	357,763	6,262
	<b>Sub Total</b>	<b>498,069</b>	<b>473,421</b>	<b>423,264</b>	<b>1,109,207</b>	<b>1,002,860</b>	<b>15,956</b>
Kora Link	Pass 2	58,847	19,983	11,970	5,400	5,400	101
	Pass 3	12,335	4,766	3,199	4,844	4,844	45
	Pass 4	3,774	1,677	1,301	3,044	3,044	20
	Pass 5	40,852	14,856	9,612	12,132	12,132	164
	<b>Sub Total</b>	<b>115,809</b>	<b>41,281</b>	<b>26,084</b>	<b>25,421</b>	<b>25,421</b>	<b>328</b>
<b>Total</b>		<b>1,100,534</b>	<b>994,674</b>	<b>897,451</b>	<b>1,296,050</b>	<b>1,178,527</b>	<b>19,438</b>

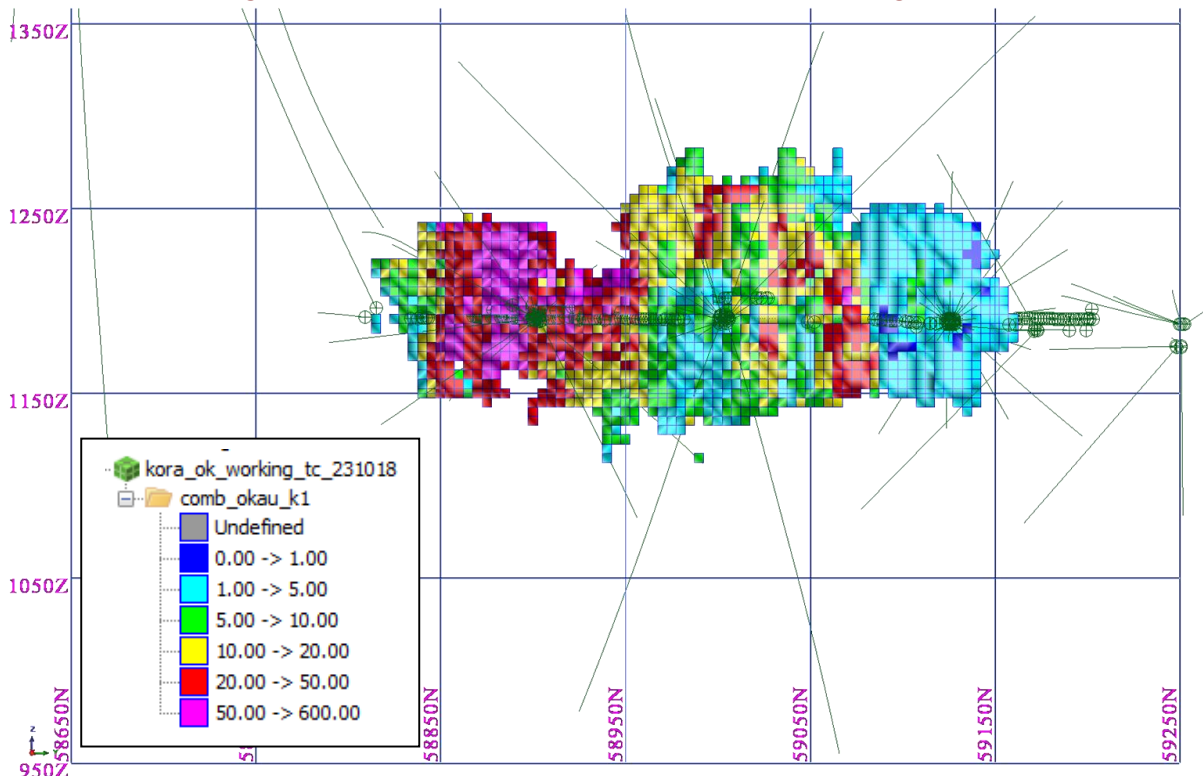
*(tc = top cut) (the use of significant figures does not imply accuracy)*

Examples of the uncut gold block grade distribution for all passes for each of the two main lodes are included below. Figure 51 shows the gold grade distribution for the K1 Lode for all search passes, whilst Figure 52 shows the gold grade distribution for Passes 1 and 2.



(view : looking west)(green lines = drillhole traces and face samples)

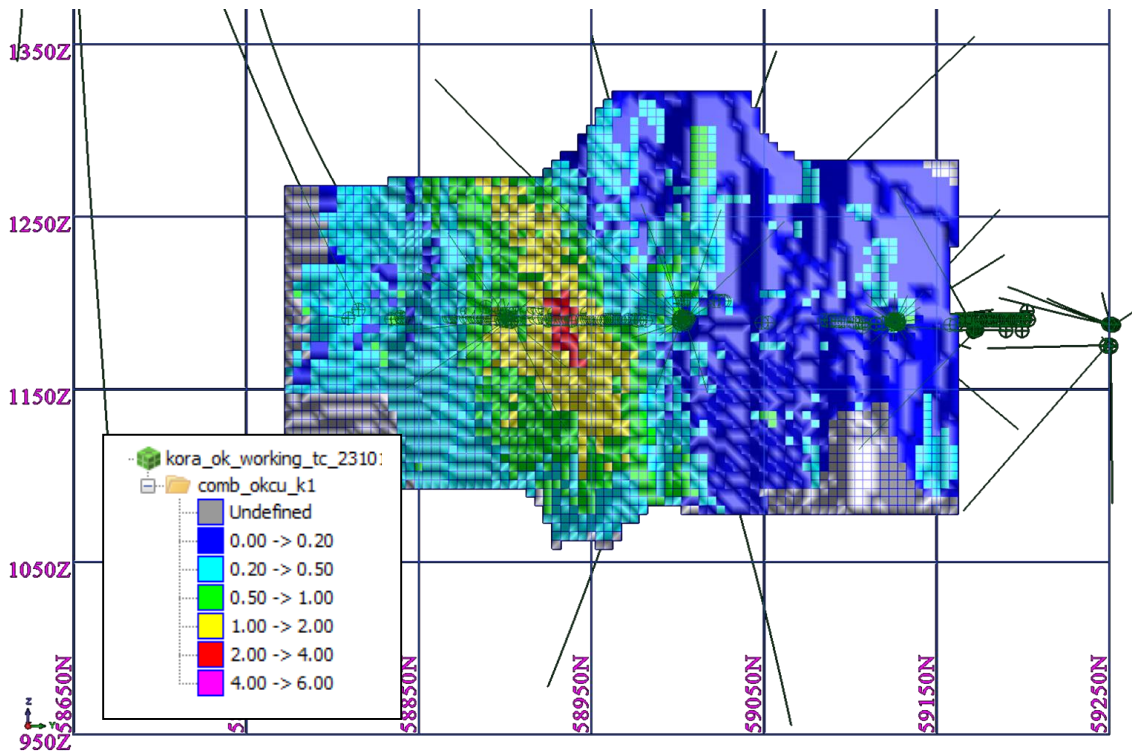
**Figure 51 K1 Lode Gold Block Grade Distribution All Passes Long Section**



(view : looking west)(green lines = drillhole traces and face samples)

**Figure 52 K1 Lode Gold Block Grade Distribution Passes 1 & 2 Long Section**

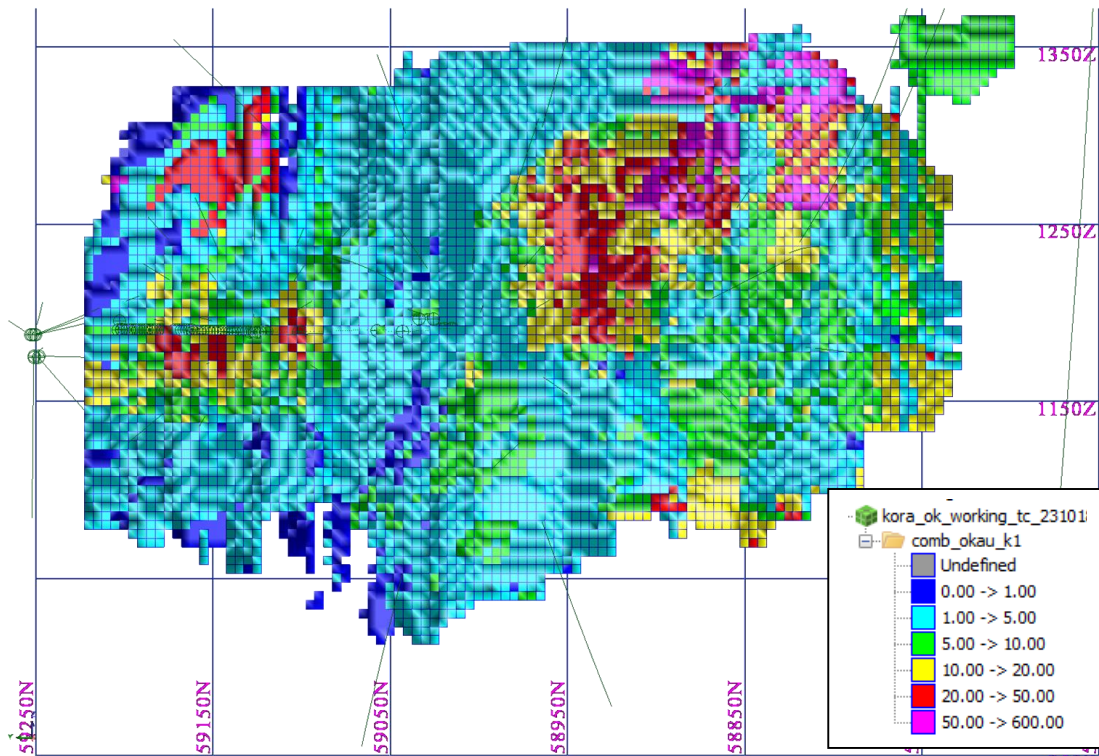
Figure 53 shows the copper block grade distribution for the K1 Lode. The grey blocks in the figure represent blocks within the interpreted wireframe that have no interpolated gold or copper grades due to a lack of data. They could conceivably represent areas for expanding the resource.



(view : looking west)(green lines = drillhole traces and face samples)

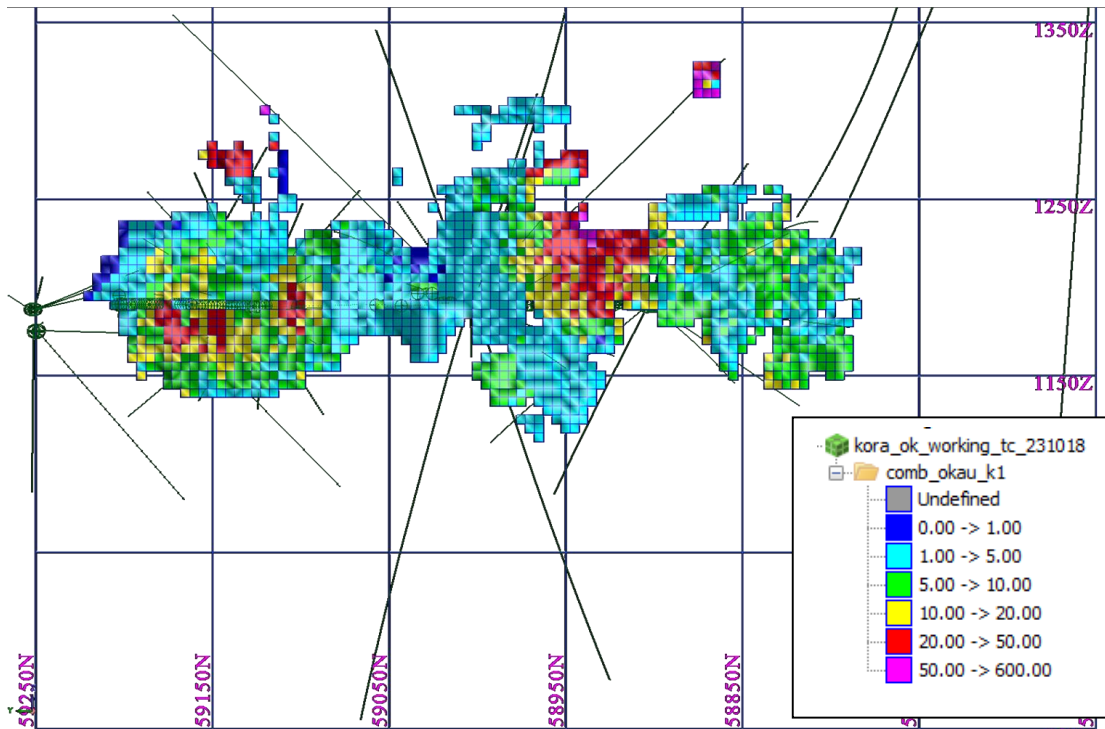
**Figure 53 K1 Copper Block Grade Distribution All Passes Long Section**

Figure 54 shows the uncut gold grade distribution for the K2 Lode for all search passes, whilst Figure 55 shows the uncut gold grade distribution for Passes 1 and 2.



(view : looking east)(green lines = drillhole traces and face samples)

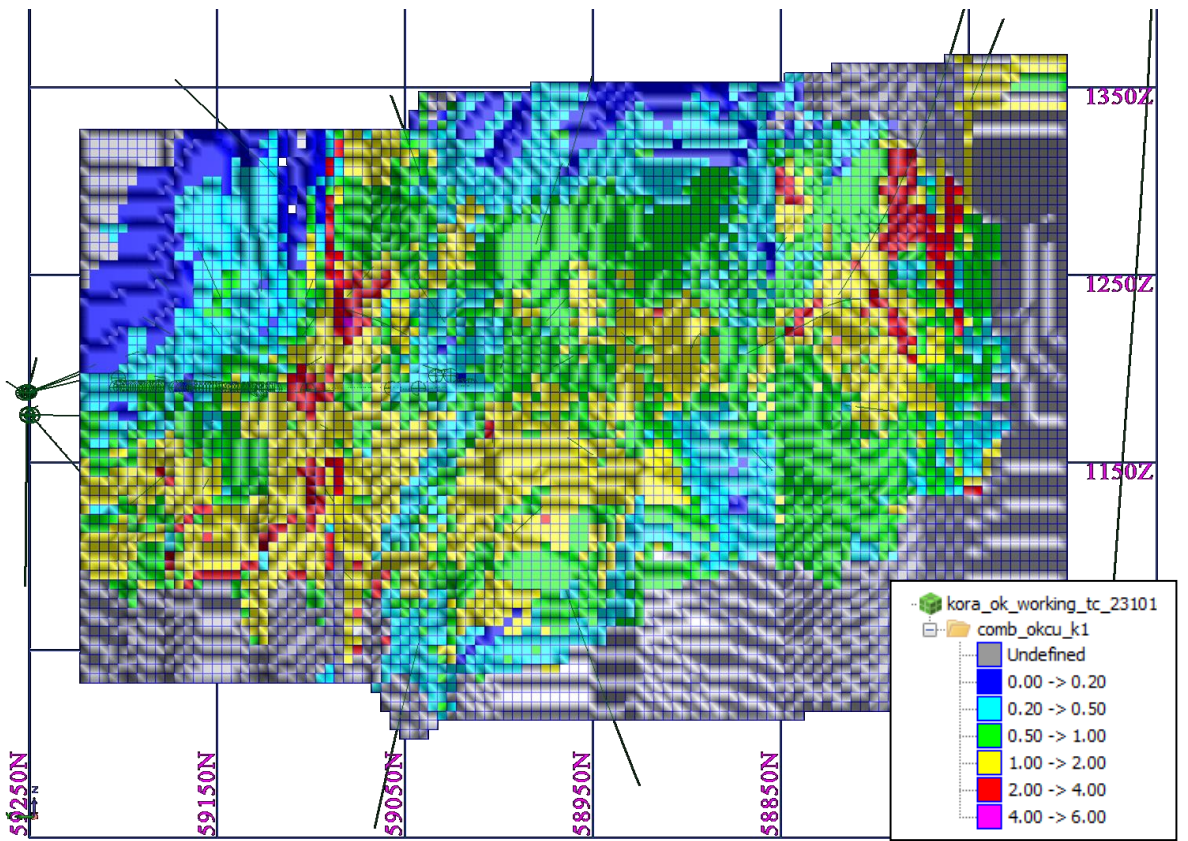
**Figure 54 K2 Gold Block Grade Distribution All Passes Long Section**



(view : looking east)(green lines = drillhole traces and face samples)

**Figure 55 K2 Gold Block Grade Distribution Passes 1 & 2 Long Section**

Figure 56 shows the copper block grade distribution for the K2 Lode. The grey blocks in the figure represent blocks within the interpreted wireframe that have no interpolated grades due to a lack of data. They could conceivably represent areas for expanding the resource.



(view : looking east)(green lines = drillhole traces and face samples)

**Figure 56 K2 Copper Block Grade Distribution All Passes Long Section**

## 14.8 BLOCK MODEL VALIDATION

Block model validation has consisted of visual inspection of block grades against drillhole assay grades, comparison of summary statistics for block grades and composite values, cumulative frequency curves for global block grades and composites, check models and reconciliation with mine production.

### 14.8.1 Block Grade-Drill Assays Visual Comparison

Figure 57 shows an example of uncut gold block grades versus drillhole assays for the K1 and K2 Lodes. The comparison is reasonable considering the section window is 10m and the surrounding drillhole and face sampling data. The high grade area in the middle of the drillhole is the Kora Link – a different gold grade attribute is used for the reporting resources for this lode (see resource classification). The red dash line equals the K1 Lode, the green dash line equals the K2 Lode and the brown solid line is the stope outline. The geology codes are the same as for Figure 32. Block size is 1m wide by 5m high.

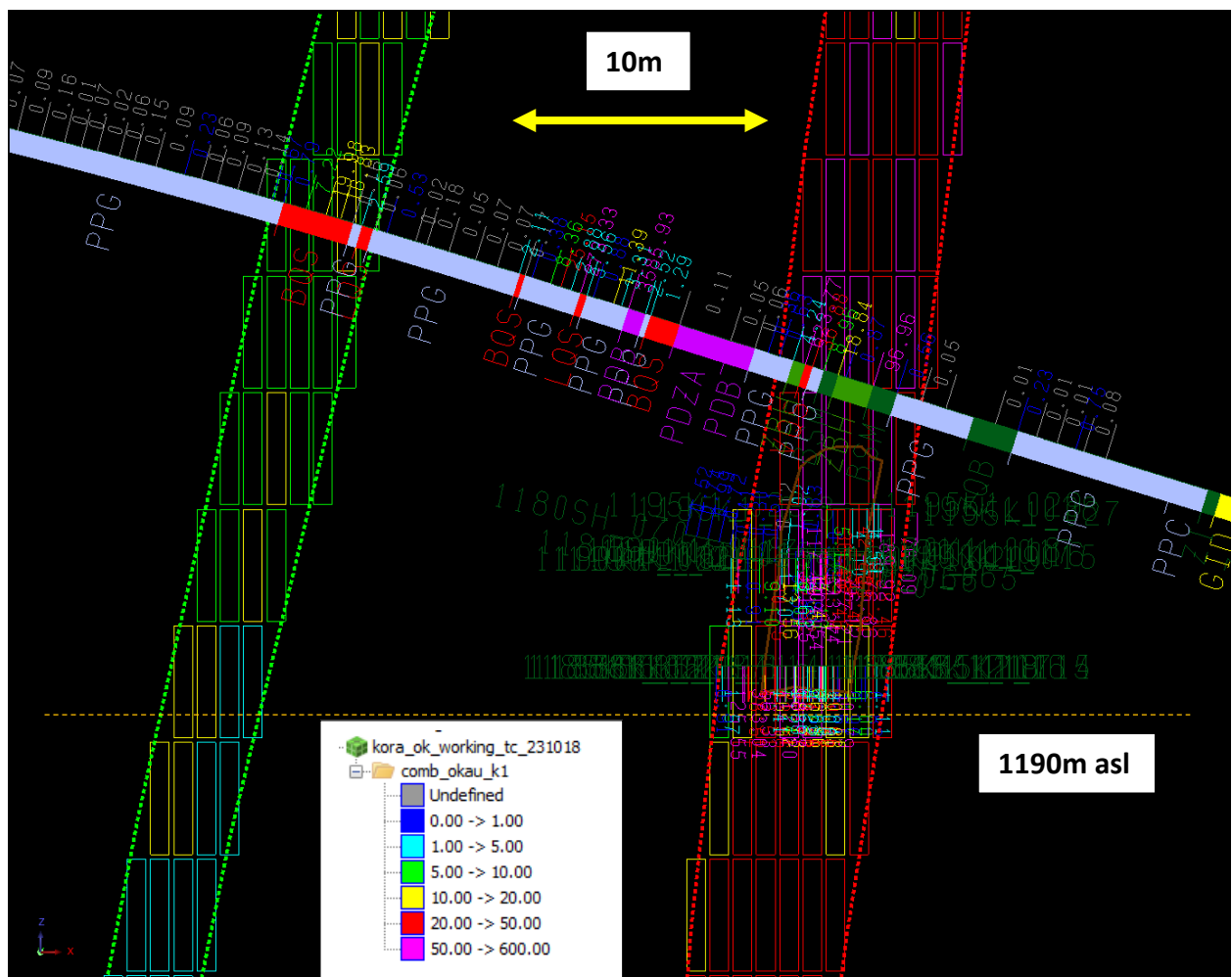


Figure 57 Gold Block Grade & Drillhole Assay Comparison Cross Section 58890mN Drillhole KMD0084

Figure 58 contains more examples of uncut gold block grades against drillhole assay values for the K1 Lode. The orange dashed line is the 1190m asl position.

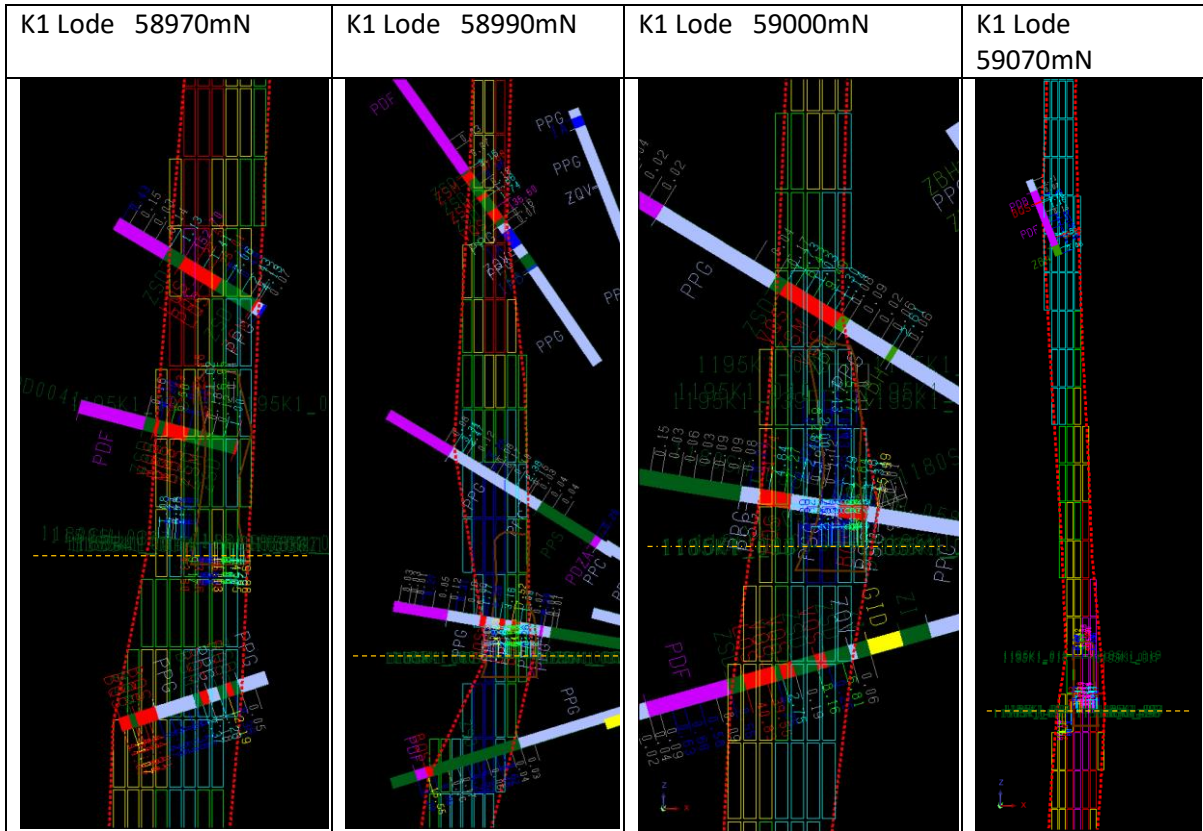


Figure 58 Examples of Block Grade and Drillhole Sample Comparisons for the K1 Lode

Figure 59 contains examples of block grades against drillhole assay values for the K2 Lode.





K1 Lode	Gold ppm		Gold_tc_400 ppm		Gold_tc_200 ppm	
	Count					
	1227	13652	1227	13652	1227	13652

K1 Lode	Silver ppm		Silver_tc ppm		Copper %	
	Comp	Block	Comp	Block	Comp	Block
Mean	6.439	5.403	5.697	5.027	0.406	0.343
Median	3.600	4.570	3.600	4.540	0.163	0.260
Mode	1	2.88	1	2.88	0.01	0.09
Standard Deviation	15.0	4.0	6.9	2.6	0.6	0.3
Sample Variance	223.7	15.8	47.7	6.8	0.4	0.1
Coeff of Variation	2.3	0.7	1.2	0.5	1.6	0.9
Kurtosis	167.7	37.1	17.8	6.4	13.1	8.8
Skewness	11.7	4.5	3.7	1.9	3.2	2.5
Range	257.3163	76.92	50	26.37	5.1615	3.17
Minimum	0	0.69	0	0.69	0	0.01
Maximum	257.3163	77.61	50	27.06	5.1615	3.18
Count	1227	13652	1227	13652	1227	13652

Table 27 shows the summary statistics comparison for the K2 Lode. The gold means behave according to expectation but for both silver and copper the block means are slightly higher than the respective composite means. In the case of copper this is put down to a large number of relatively higher grade blocks on the periphery of the deposit having a significant impact e.g. drillhole KMDD0093. The difference for silver is much smaller but likely due to the same reason.

**Table 27 : Comparison of summary statistics for composites & block grades for the K2 Lode**

K2 Lode	Gold ppm		Gold_tc_400 ppm		Gold_tc_200 ppm	
	Comp	Block	Comp	Block	Comp	Block
Mean	8.869	8.661	8.622	8.237	7.957	7.374
Median	1.584	4.840	1.584	4.840	1.584	4.840
Mode	0.65	1.32	0.65	1.32	0.65	1.32
Standard Deviation	32.9	13.8	29.3	11.7	22.0	8.1
Sample Variance	1081.9	190.9	856.2	136.6	483.3	65.8
Coeff of Variation	3.7	1.6	3.4	1.4	2.8	1.1
Kurtosis	143.9	31.7	99.6	24.9	36.8	12.0
Skewness	10.6	4.9	8.8	4.3	5.6	2.9
Range	555.606	186.75	399.99	147.17	199.99	80.38
Minimum	0.01	0.04	0.01	0.04	0.01	0.04
Maximum	555.616	186.79	400	147.21	200	80.42
Count	888	25844	888	25844	888	25844

K2 Lode	Silver ppm		Silver_tc ppm		Copper %	
	Comp	Block	Comp	Block	Comp	Block
Mean	18.439	19.275	16.944	17.443	0.804	0.892
Median	7.314	14.410	7.314	14.480	0.338	0.760
Mode	1	13.51	1	11.85	0.01	0.31
Standard Deviation	48.1	18.3	27.2	11.0	1.4	0.6
Sample Variance	2315.5	336.2	739.1	121.2	1.9	0.4

K2 Lode	Silver ppm		Silver_tc ppm		Copper %	
Coeff of Variation	2.6	1.0	1.6	0.6	1.7	0.7
Kurtosis	327.3	61.9	19.7	4.5	18.5	3.4
Skewness	15.3	5.4	4.0	1.7	3.9	1.5
Range	1129.31	451.8	199.9	109.77	11.366	5.76
Minimum	0.1	1.06	0.1	1.11	0.004	0.01
Maximum	1129.41	452.86	200	110.88	11.37	5.77
Count	888	25844	888	25844	888	25844

Table 28 shows the summary statistic comparison for the Kora Link. This time the uncut gold mean for the block grades is marginally higher than the composite mean, but is considered minor compared to the impact of the three high grade composite samples, the wide drillhole spacing and the lack of data. Likewise, for silver and copper the higher block grade means are attributed to the wide drill spacing and the limited amount of composite data. The outcomes do help to reinforce the lack of confidence in the gold grade interpolation and hence the resource estimates for the Kora Link.

**Table 28 : Comparison of summary statistics for composites & block grades for the Kora Link**

Kora Link	Gold ppm		Gold_tc_400ppm		Gold_tc_200 ppm	
	Comp	Block	Comp	Block	Comp	Block
Mean	69.035	70.105	25.140	24.994	16.050	15.795
Median	1.291	7.240	1.291	7.240	1.291	7.240
Mode	0.23	6.3	0.23	6.3	0.23	6.3
Standard Deviation	291.5	113.2	83.9	32.9	42.9	16.4
Sample Variance	84997.3	12806.8	7036.7	1083.1	1838.5	269.9
Coeff of Variation	4.2	1.6	3.3	1.3	2.7	1.0
Kurtosis	22.4	3.7	18.1	3.6	15.1	3.2
Skewness	4.8	2.1	4.3	2.1	3.9	2.0
Range	1614.619	541.28	399.9461	159.96	199.9461	80.28
Minimum	0.0539	1.4	0.0539	1.4	0.0539	1.4
Maximum	1614.673	542.68	400	161.36	200	81.68
Count	44	734	44	734	44	734

Kora Link	Silver ppm		Copper %	
	Comp	Block	Comp	Block
Mean	14.271	15.392	0.552	0.640
Median	3.000	14.595	0.266	0.520
Mode	3	3.37	1.02	0.34
Standard Deviation	24.3	10.3	0.9	0.4
Sample Variance	591.1	105.4	0.9	0.1
Coeff of Variation	1.7	0.7	1.7	0.6
Kurtosis	6.1	0.5	15.3	1.5
Skewness	2.5	0.8	3.8	1.3
Range	107.5	55.92	4.8684	2.08
Minimum	0.5	2.06	0.0116	0.19
Maximum	108	57.98	4.88	2.27
Count	44	734	44	734

The conclusion from the composite and block grades comparisons is that there appears to be no obvious issues with the grade interpolation for all elements.

### 14.8.3 Cumulative Frequency Curves Comparison

Another grade interpolation check is to compare cumulative frequency curves for the composites and block grades. In the following figures domain 1 represents the block grades and domain 2 represents the composite data. Figure 60 shows the cumulative frequency comparison for uncut gold in the K1 Lode and exhibits an almost ideal expected pattern.

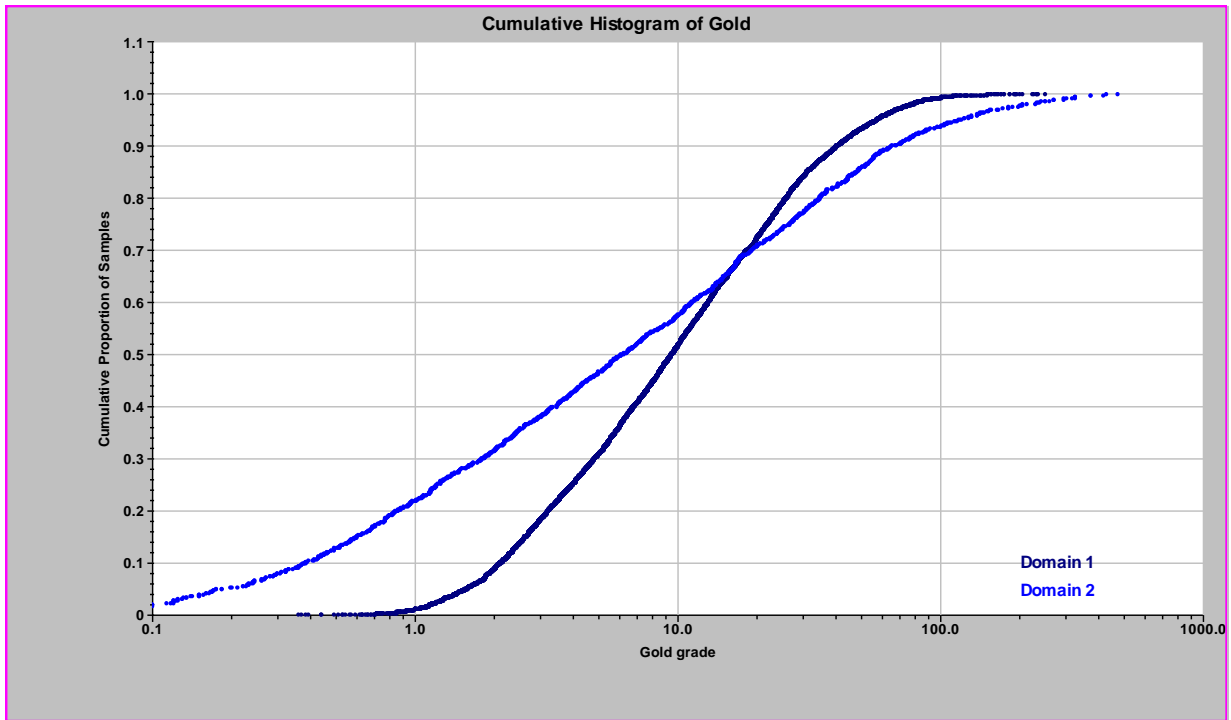


Figure 60 Gold Block Grade & Composite Cumulative Frequency Curves for the K1 Lode

Figure 61 shows the comparison for uncut gold in the K2 Lode and indicates an acceptable pattern indicating no significant issues with the grade interpolation.

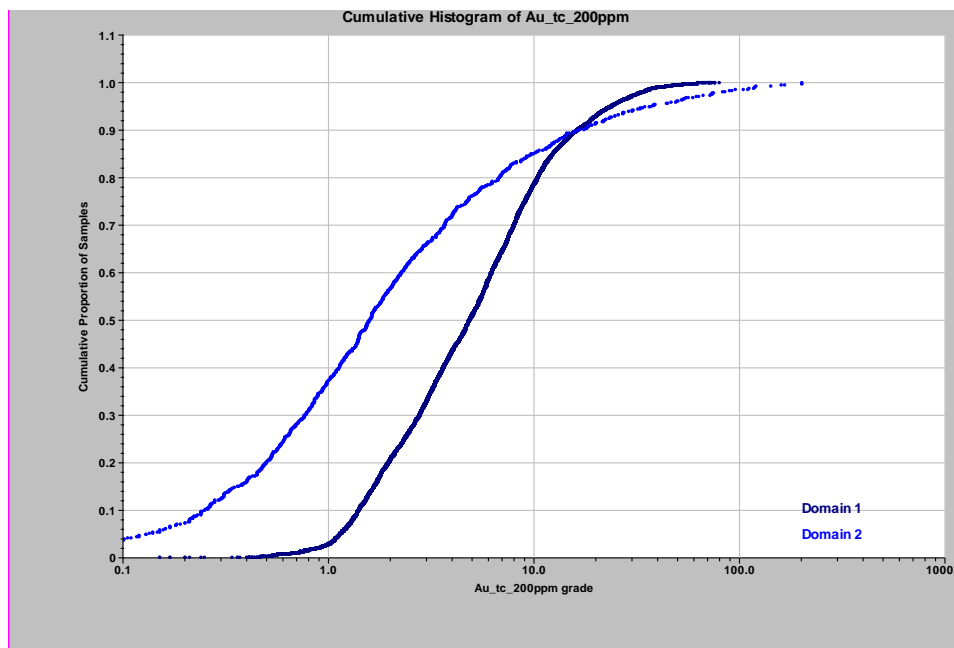


Figure 61 Gold Block Grade & Composite Cumulative Frequency Curves for the K2 Lode

Figure 62 shows the comparison for copper in the K2 Lode and indicates an acceptable pattern indicating no significant issues with the grade interpolation.

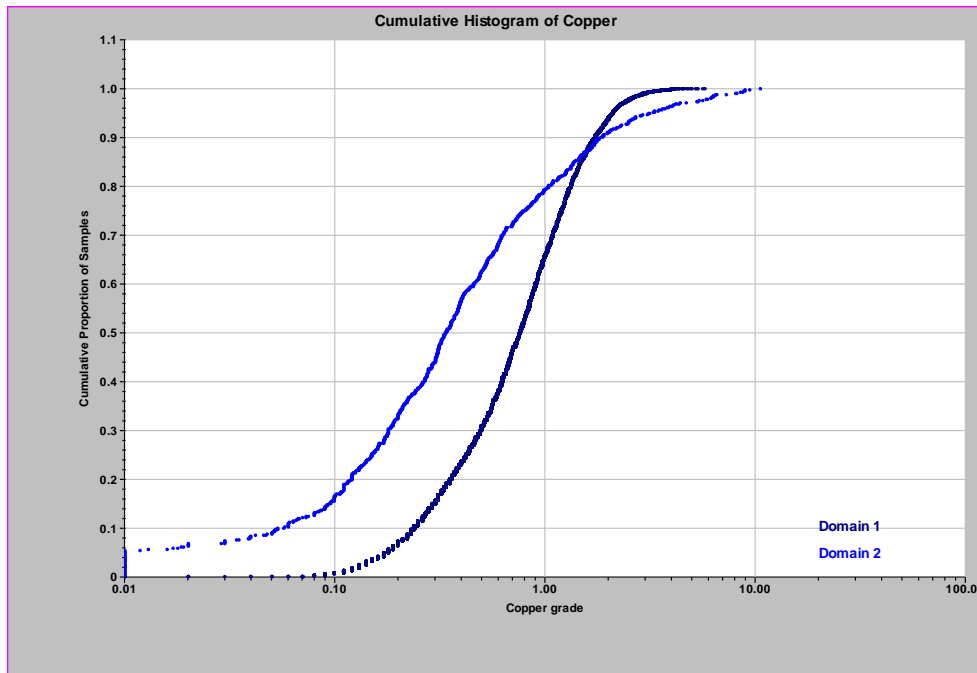


Figure 62 Copper Block Grade & Composite Cumulative Frequency Curves for the K2 Lode

Figure 63 shows the comparison for the 200ppm cut gold data in the Kora Link and indicates highly significant issues with the modelled grades suggesting a potential overstatement of grades relative to the composite values. (note that there are two visible high grade composites in a black circle, to the right of the domain 1 curve (block grades))

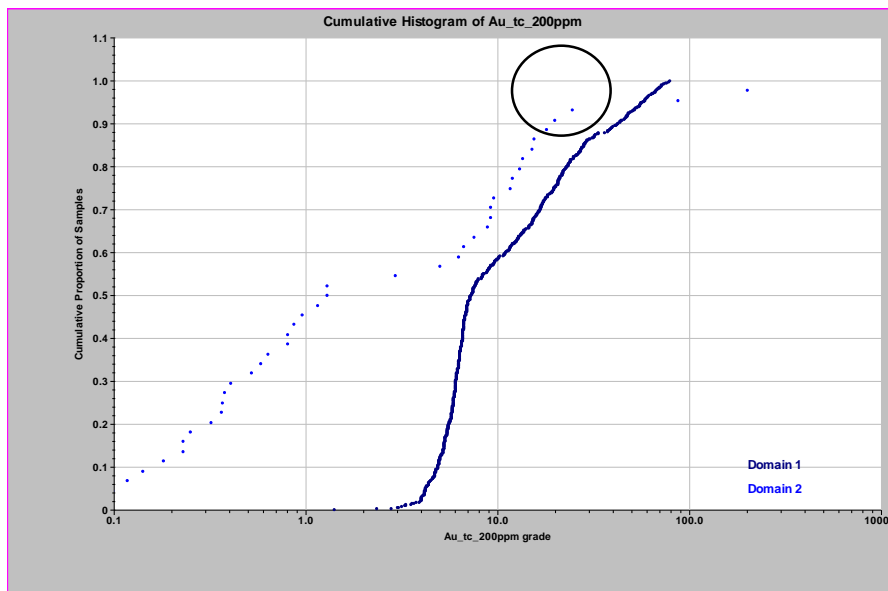


Figure 63 Gold Block Grade & Composite Cumulative Frequency Curves for Kora Link

In the initial modelling work H&SC used the K92ML-supplied mineral wireframes for K1E, K1W and K2. It was only after attempting reconciliation with these models, with the resultant significant under-reporting, and the realisation that the mining width i.e. the surveyed stope shapes, was substantially greater than the K92ML wireframe interpretation that revised wireframes for K1 and K2 were designed to include lower grade peripheral material. However, prior to that realisation, some check

OK models were completed on the original K1E, K1W and K2 Lodes to gain a measure of the robustness of the resource estimates and their sensitivity to various parameters.

That work produced the following observations:

1. For both K1E, K1W or K2 that the difference between reporting estimates by the partial percent or centroid in/out methods was insignificant.
2. For the K1E and K1W modelling using just the drillhole grades for grade interpolation significantly under-reported the amount of gold. This outcome was used to further justify the inclusion of the face samples in the grade interpolation as essentially the drilling had 'missed' the high grade zone currently being mined at K1. Exclusion of the face sampling values in the grade interpolation for the K2 Lode had no significant impact.
3. Using a larger more traditional block size for the K2 Lode consistent with the drillhole spacing ie 1m by 15m by 15m, indicated no significant impact of over-smoothing associated with the smaller 1m by 5m by 5m block size.

The conclusions from the check models are that it is reasonable to use the block centroid inside the relevant mineral wireframe for reporting estimates and that the combining of the metal grades for each lode into one set of combined metal grades is acceptable. The relatively small block size does not seem to result in an over-statement of grades via over-smoothing. Using the combined drilling and face sampling data for grade interpolation is acceptable.

#### 14.8.4 Reconciliation

Reconciliation data was supplied by K92ML, comprising mined tonnes processed by the mill and the amount of gold ounces recovered for the end of July 2018 and the end of September 2018. A comparison of the surveyed stope shapes with tonnes milled initially showed significantly more tonnes had been milled than had been mined. There was some difficulty in establishing all the sources of material processed by the mill but H&SC has been assured by K92ML that the eventual figures produced from 'other' sources were correct. The mill processed material has included the K1 and K2 development drives and stopes plus the 'other' material derived from reprocessed material and small amounts of material from other deposits and other Kora North drives.

The resulting reconciliation for the end of July 2018 is detailed Table 29 (note the gold ounces from the block model are reported with no top cut). The stope shape survey is the surveyed void for each vein and based on the K92ML discussion over density, a figure of 2.8t/m<sup>3</sup> was used for K1 and 2.9t/m<sup>3</sup> was used for K2. This enabled a reasonably close match for the mined material from the surveyed stopes which approached the milled tonnes when the 'other' material was taken into account. The comparison of ounces indicates a reasonably close match although it should be noted that the mill ounces are recovered ounces (on a gold recovery of 93%).

**Table 29 : End of July 2018 Reconciliation**

To end of July 2018				Mill Production Figures		
				<b>Tonnes</b>	<b>Au (g/t)</b>	<b>Ounces</b>
			<b>Total</b>	<b>46,023</b>	<b>16.18</b>	<b>23,935</b>
	Stope Shape Survey			H&SC Resource Model		
<b>Lode</b>	<b>Density</b>	<b>Tonnes</b>	<b>Density</b>	<b>Tonnes</b>	<b>Au (g/t)</b>	<b>Ounces</b>
K1	2.8	18,051	2.8	17,823	29.82	17,089
K2	2.9	16,496	2.9	16,465	8.52	4,511
	<b>Total</b>	<b>34,547</b>	<b>Total</b>	<b>34,288</b>	<b>19.59</b>	<b>21,600</b>
			Other	12,000	5.5	2,127
			<b>Total</b>	<b>46,288</b>	<b>15.94</b>	<b>23,727</b>

*(the use of significant figures does not imply accuracy)*

The end of September 2018 reconciliation (Table 30) still indicates a good result although the block model understates the number of recovered ounces by just under 4%.

**Table 30 : End of September 2018 Reconciliation**

To end of September 2018				Mill Production Figures			
				<b>Tonnes</b>	<b>Au (g/t)</b>	<b>Ounces</b>	
			<b>Total</b>	<b>62,876</b>	<b>16.64</b>	<b>33,633</b>	
	Stope Shape Survey			H&SC Resource Model			
<b>Lode</b>	<b>Density</b>	<b>Tonnes</b>		<b>Tonnes</b>	<b>Au (g/t)</b>	<b>Ounces</b>	
K1	2.8	25,055	2.8	24,544	29.65	23,400	
K2	2.9	24,393	2.9	24,013	7.73	5,969	
	<b>Total</b>	<b>49,448</b>	<b>Total</b>	<b>48,557</b>	<b>18.81</b>	<b>29,369</b>	
			Jul-18	Other	12,000	5.5	2,127
			Sep-18	Other	3,433	7.75	855
			<b>Total</b>	<b>63,990</b>	<b>15.72</b>	<b>32,351</b>	

*(the use of significant figures does not imply accuracy)*

From this work it became apparent that the number of block model ounces is significantly sensitive to density, which may account for the slight under-reporting of the block model. Also the results are sensitive to the tonnes and gold grade of the 'other' material from alternative sources.

In addition, it appears that with model ounces only slightly less than production ounces, the combination of variography, composite length, geological interpretation and search parameters has removed/significantly reduced the smearing of the very high gold grades and any subsequent overstatement of the resource estimates. It should be remembered that the reporting of the resource estimates for the reconciliation uses no top cuts for gold.

The reconciliation provides a reasonable level of confidence in the new resource estimates and the methodologies used.

Taking mill recoveries into account, the model under-predicts the gold ounces by between 8 and 11%.

## 14.9 RESOURCE CLASSIFICATION

Allocation of the classification of the Mineral Resources is derived from the search pass number derived from grade interpolation associated with each block which essentially is a function of the drillhole and face sample data point distribution. Additional considerations were included in the assessment of the classification, in particular the geological understanding and complexity of the deposit, sample recovery, quality of the QAQC sampling and outcomes, density data, block model validation and reconciliation with production.

Table 31 contains details of the resource classification from the pass categories.

**Table 31 : Resource Classification Details**

Pass Category	Resource Classification
1	Measured
2	Indicated
3, 4 & 5	Inferred

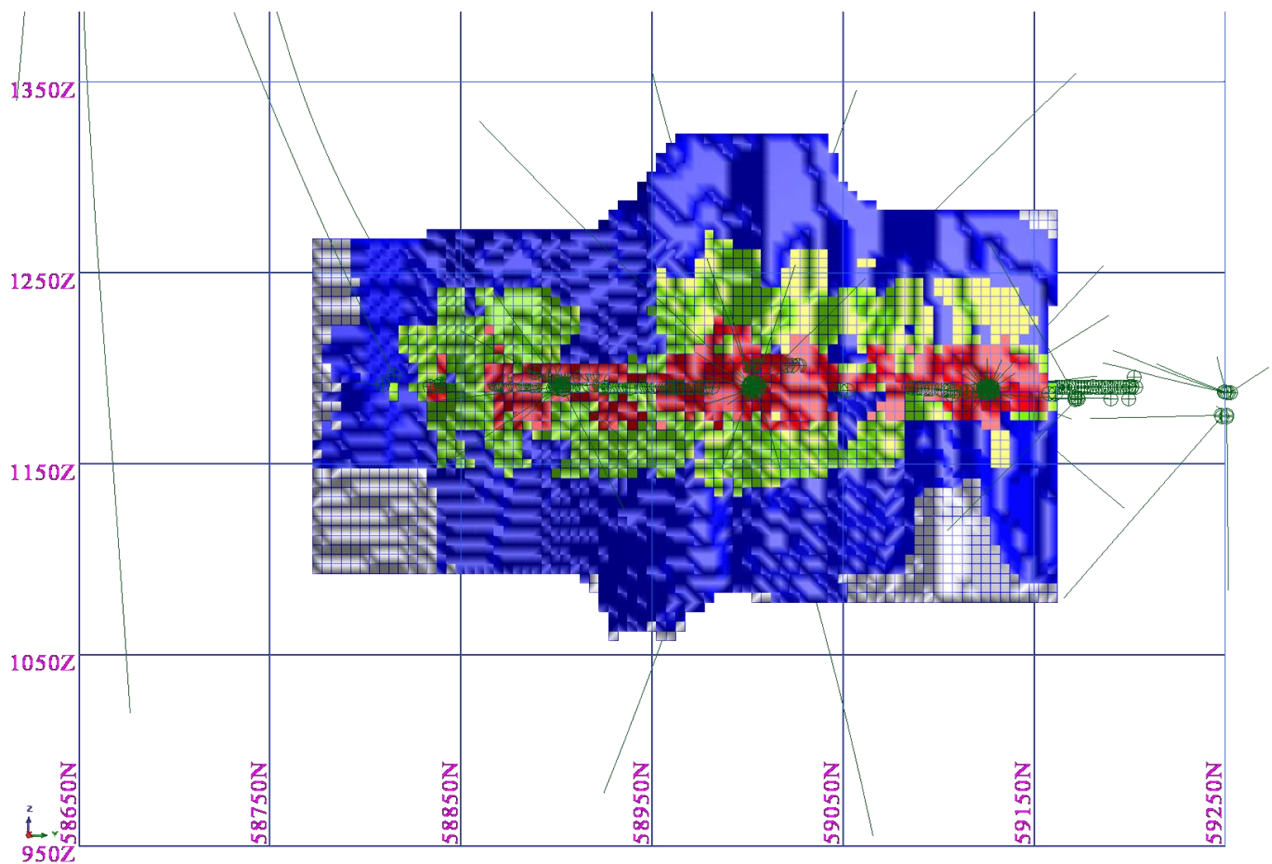
Issues impacting on the resource classification are:

- The geology of the deposit and the style of mineralization: shear zone hosted gold mineralization is notorious for poor grade continuity. The ability to physically put a finger on any of the gold mineralization contacts for the Kora North Lodes is considered variable, which can lead to sub-optimal resource estimation if care is not exercised with the geological interpretation and grade interpolation. To counteract the complex grade distribution H&SC has fused a combination of composite length, geological interpretation, variography and search parameters (especially the minimum number of data points required) so as to minimise the possible overstatement of grade within the resource estimates. This appears to have been successfully completed based on the reconciliation with mill production.
- The sampling methods: a substantial amount of the high grade assays are from face sampling which can be prone to variance associated with the actual sampling method eg not passing into background on both hangingwall and footwall and is considered sub-optimal with respect to diamond drilling. The lack of QAQC for the face sampling is not ideal. Counter to these potential negatives is the development and stoping associated with the face sampling which appears to be reconcilable with the block model. Another positive is that the majority of the volume of the mineral lodes is covered by diamond core drilling with an appropriate QAQC programme that was completed whilst the face sampling was in progress. The supposition is that diamond core outcomes will validate the accuracy of the face sampling as the analysis was concurrent.
- The general drill hole spacing and hence data distribution is considered wide for a large part of the deposit. This impacts negatively on the variography, which in turn indicates that much closer spaced drilling is required for more confidence in the grade continuity, which in turn is reflected in the resource classification. The close spaced face sampling provides a high level of confidence in the gold grade continuity locally.
- Limited density data: there is an insufficient amount of data for grade interpolation. However, results presented seem to indicate modest variations between and within each lode such that the calculated default values are reasonable. Thus there is a moderately high level of confidence in the density values. Sample selection for density measurement is at risk of a

positive bias with samples of competent core preferentially selected. An assumption has been made that there are no significant cavities or that if they exist their impact is minimal.

- The QAQC procedures and outcomes: these are considered adequate and indicate some minor issues with the main one being that the standards are not certified for copper or silver. However, the QAQC outcomes impart a high level of confidence in the appropriateness of the sampling methods and the accuracy of the assays. It would have been ideal if some QAQC had been completed on the face sampling rather than just relying on the drilling samples.
- Core recoveries: the current recovery of >95% is reasonable but some of the initial drilling was a little low (around the 90% mark). However, the confidence level in gold grade of the samples is high and there is no negative relationship between low recoveries and high gold grade.
- Reconciliation: this is reasonable with predicted block model ounces generally within 11% of mill production up to the end of September 2018. This has allowed for a high level of confidence of gold content in material in the immediate vicinity of the development drives and mined stopes.

Figure 64 represents the distribution of Measured (red blocks), Indicated (green blocks) and Inferred Resources (blue blocks) for the K1 Lode. The grey blocks represent blocks with no interpolated grades due to a lack of data and conceivably represent areas for expanding the resource estimates via additional drilling.

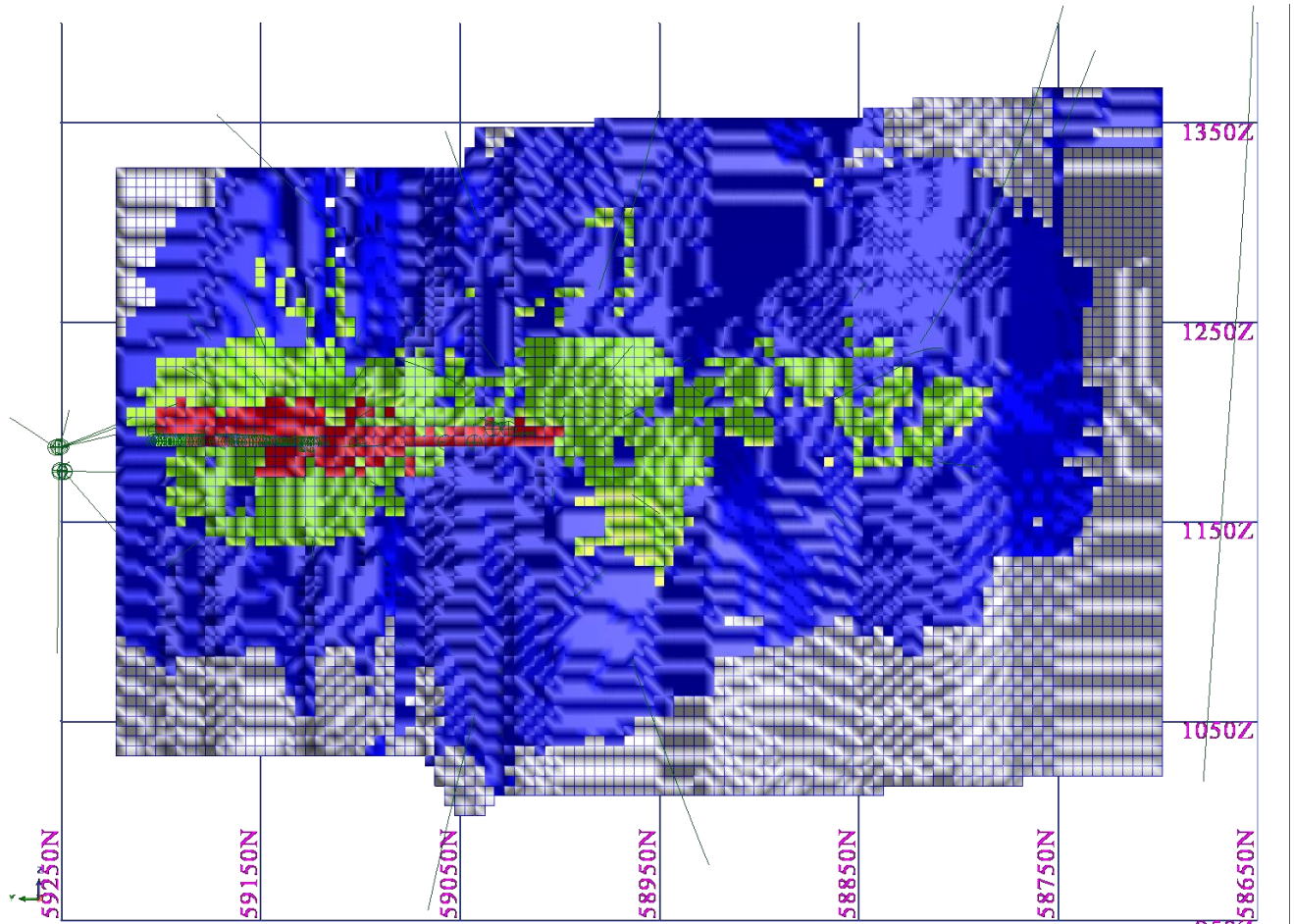


(view : looking west)(green lines = drillhole traces and face samples)

**Figure 64 Resource Classification for the K1 Lode**

Figure 65 represents the distribution of Measured, Indicated and Inferred Resources for the K2 Lode with the same colour scheme as for the K1 Lode figure.





(view : looking east)(green lines = drillhole traces and face samples)

Figure 65 Resource Classification for the K2 Lode

#### 14.10 DISCUSSION OF FACTORS FOR THE MINERAL RESOURCES

1. Ordinary Kriging as a valid modelling method.

Coefficients of variation for the composites are relatively low for this type of deposit, around the 2-2.5 mark, which indicates limited skewed data and thus in combination with visual reviews of the composite grade distribution, the method is acceptable for grade interpolation. This is in preference to a more sophisticated modelling method like Multiple Indicator Kriging (“MIK”).

2. Geological interpretation completed by H&SC.

The wireframing method used by H&SC is based on encompassing the gold mineralization with a nominal cut-off grade of 0.2g/t Au in conjunction with geological sense including avoidance of over-constraining the data. The sampling has been to geological control which adds some control to the interpretation of gold mineralization. The wireframes have also been based on the current mining method which involves dilution with generally lower gold grade material and barren waste rock.

3. Incorporation of the face sampling data into the grade interpolation.

Summary statistics for the K1 Lode show a much higher mean for the face sampling (with a relatively low CV) compared to the drillhole values, which is attributable to the high grade zone encountered in the mining. Modelling of just the drillhole data failed to fully pick up this high grade K1 zone. Therefore, inclusion of the face sampling data in the grade interpolation is considered justified. Summary statistics for the K2 Lode indicates reasonably similar data populations for drilling and face sampling with the latter having a lower coefficient of variation.

Therefore, inclusion of the face sampling data in the grade interpolation is considered justified. In general, the summary statistics support the inclusion of the face sampling data with the drilling data with the vast majority of the face sampling included in the wireframes en masse. In addition, modelling just the drillhole data would significantly under-report the resource estimates for the K1 Lode.

4. Limited density data.

There is some uncertainty within K92ML as to the average density values to be used for reporting resources for the different lodes. There is not enough data for interpolating at this stage and has resulted in the use of a single default value,  $2.8\text{t/m}^3$ , for all lodes. However, the similarity in the rather limited range of values for the different lodes suggest that the default value used in resource estimation seems reasonable.

5. The relatively small block size.

Often a small block size can lead to over-smoothing of grades and thus an overstatement of grade especially associated with a deposit of this type. However, in this case the block size is a function of the relatively close spaced drilling and face sampling associated with the K1 Lode. A check model was completed using a more typical 1 by 15m by 15m block size for the wider spaced drilling of the K2 Lode but there seemed to be no significant difference in the reported estimation results.

6. No top cuts for gold applied.

Whilst the use of top cutting is regarded as standard industry practice, H&SC considers that it is often used rather arbitrarily with no sound geological or statistical basis. H&SC is generally reluctant to apply top cuts preferring to control any high grade samples by a combination of geological interpretation, composite length, variography and search parameters. The reconciliation outcomes strongly suggest that gold top cuts are not needed.

7. Minimum number of data.

H&SC has kept the minimum number of data for the Pass 5 grade interpolation search relatively high at 6. In H&SC's experience using a lower number of minimum data invites an increase in risk to the interpolated grades particular at the margin of the lodes.

8. Reconciliation.

Linking the confidence for the resource estimates to reconciliation is significantly dependant on the details of tonnes and grade of the 'other' material provided by K92ML. A significant variation in the current numbers may undermine some of the confidence in the resource estimates.

The key to the confidence of the resource estimates is the apparent good reconciliation of the block model with the mill production. This would strongly support the methodologies used for the resource modelling, in particular the geological interpretation, the composite interval, the apparent lack of need for top cutting, the search parameters and the relatively small block size.

#### 14.11 MINERAL RESOURCE ESTIMATES

Reporting of the new Mineral Resources for the Kora North deposit is included as Table 32. The constraints are uncut gold grade at a zero cut-off for block centroids inside the relevant mineral wireframe. The silver grade is the top cut value due to the impact of high grades associated with the K2 Lode. Some low grade material is included with the estimates as it is a mineable resource based on the current mining practices. Also depletion from mining up to the end of September 2018 has been removed from the reported estimates.

For the Kora Link the estimates have been reported for the same centroid constraint but with a gold top cut of 200ppm with all estimates classified as Inferred. This is due to a relative lack of data for the

lode, the small number of very high grades associated with it and the different interpretations that can be made for the data.

**Table 32 : Mineral Resources for Kora North for a 0g/t gold cut off grade**

Lode	Category	Mt	Au g/t	Au Mozs	Ag ppm	Ag Mozs	Cu %	Cu Mlbs
K1	Measured	0.12	21.6	0.08	5.9	0.02	0.3	0.9
K2	Measured	0.04	9.1	0.01	18.8	0.02	0.8	0.7
<b>Total</b>	<b>Measured</b>	<b>0.15</b>	<b>18.7</b>	<b>0.09</b>	<b>8.9</b>	<b>0.04</b>	<b>0.5</b>	<b>1.6</b>
K1	Indicated	0.29	17.2	0.16	5.3	0.05	0.3	2.1
K2	Indicated	0.40	7.5	0.10	20.4	0.26	1.1	9.6
<b>Total</b>	<b>Indicated</b>	<b>0.69</b>	<b>11.6</b>	<b>0.26</b>	<b>14.1</b>	<b>0.31</b>	<b>0.8</b>	<b>11.8</b>
	<b>Total M&amp;I</b>	<b>0.85</b>	<b>12.9</b>	<b>0.35</b>	<b>13.1</b>	<b>0.36</b>	<b>0.7</b>	<b>13.3</b>
K1	Inferred	0.52	14.5	0.24	4.7	0.08	0.3	3.9
K2	Inferred	1.35	9	0.39	16.5	0.72	0.8	24.9
Kora Link	Inferred	0.05	15.8	0.03	15.4	0.03	0.6	0.7
<b>Total</b>	<b>Inferred</b>	<b>1.92</b>	<b>10.7</b>	<b>0.66</b>	<b>13.3</b>	<b>0.82</b>	<b>0.7</b>	<b>29.5</b>

(minor rounding errors)

Global Mineral Resources									
Category	Mt	Au g/t	Au Mozs	Ag ppm	Ag Mozs	Cu %	Cu Mlbs	Au_Eq g/t	Au_Eq Mozs
Measured	0.15	18.7	0.09	8.9	0.04	0.5	1.6	19.6	0.09
Indicated	0.69	11.6	0.26	14.1	0.31	0.8	11.8	13	0.29
<b>Total</b>	<b>0.85</b>	<b>12.9</b>	<b>0.35</b>	<b>13.1</b>	<b>0.36</b>	<b>0.7</b>	<b>13.3</b>	<b>14.1</b>	<b>0.39</b>
<b>Inferred</b>	<b>1.92</b>	<b>10.7</b>	<b>0.66</b>	<b>13.3</b>	<b>0.82</b>	<b>0.7</b>	<b>29.5</b>	<b>11.9</b>	<b>0.74</b>

(minor rounding errors)

Gold Equivalent (Au Eq) g/t was calculated using the formula  $Au\ g/t + (Cu\% \times 1.53) + Ag\ g/t \times 0.0127$ . Gold prices of US\$1,300/oz; Silver US\$16.5/oz; Copper US\$2.90/lb were used.

(No account of metal recoveries through the plant have been used in calculating the metal equivalent grade. However, production is currently achieving 93% metal recovery for both gold and copper and gold is currently providing 95% and copper 5% of the total revenue of the mine).

## 15 MINERAL RESERVE ESTIMATES

This item is not applicable for this report.

## 16 MINING METHODS

During the mining operation at Irumafimpa between 2006 and 2009, mining was predominantly shrink stoping with some longhole stoping. The method applied was based on the geological structure and varying vein widths. Multiple independent reviews have shown that previous operators had considerable difficulty with dilution issues during mining which has been mainly attributed to the geological complexity of the veins and a poor understanding of grade distribution within the veins.

Remedial work by K92ML on the main mine access from the 800 Portal at Irumafimpa was completed during 2016. Limited mining activities were undertaken in the lower parts of Irumafimpa during 2017, between 1205mRL and 1235mRL, with ore being mined from development headings and from stopes. A small amount of low grade ore was also recovered from remnant stopes on the 1250mRL level.

In parallel with mining activities at Irumafimpa in 2017 an Exploration Drive was commenced from the southern switchback of the Irumafimpa incline, and advanced southwards to provide access for exploration drilling and development of the Kora deposit.

In late 2017 initial exploration drilling to the south of Irumafimpa identified a mining area between Irumafimpa and Kora, called Kora North. The highly encouraging initial results and available access to this area resulted in a focus on further drilling, as well as cross cutting through and development along the Kora North veins. This also facilitated collection of a bulk sample for metallurgical evaluation.

With continued positive results for Kora North and the definition of a substantial Mineral Resource, K92ML made a strategic decision in early 2018 to cease mining activities at Irumafimpa and to devote its resources instead to development of and production from Kora North. This decision was driven by the more favourable characteristics of Kora North compared to Irumafimpa including: -

- Greater confidence in stope definition at Kora North
- Generally better ground conditions at Kora North
- More tonnes per longitudinal area and hence greater productive capacity at Kora North

Exploitation of this area has subsequently been the focus of K92ML for mining during 2018, providing mill feed and gold production. K92ML proposes to build up production from Kora North while continuing to advance the Exploration Drive south to Kora. Kora would be fully evaluated and developed in time to maintain production as Kora North is exhausted.

The proposed mining method for Kora North is described in detail below. The conceptual plan for Kora is also presented again with minor changes to previous reporting in the 2 March 2017 PEA Technical Report. Please note that for both Kora North and Kora the estimated tonnes and grades derived from the Mineral Resource estimate that are presented in conjunction with the mine plan do not represent an estimate of Mineral Reserves.

### 16.1 KORA NORTH PHASE

In November 2018 AMDAD prepared a mine plan for the Kora North mineralisation based on the most recent exploration drilling information and Mineral Resource estimate. Kora North consists of three modelled sub parallel mineralisation zones; from east to west K1, K Link(KL) and K2 as shown in the figure below.

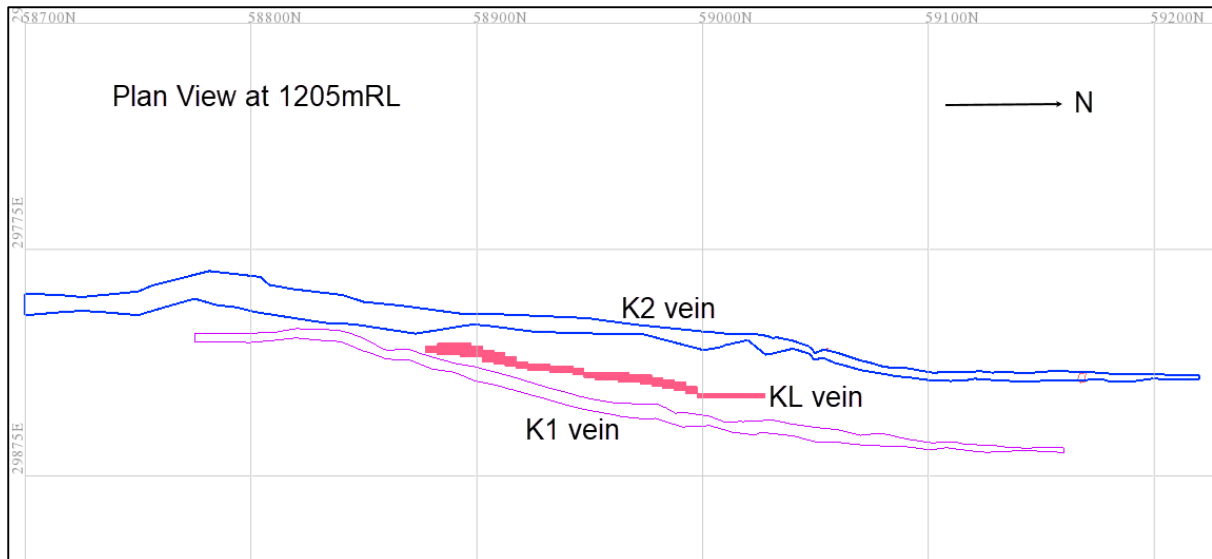


Figure 66: Kora North Phase Mineralization

### 16.1.1 Kora North Phase Mining Method Selection

The K1 and KL zones are generally narrow sub-vertical zones, up to approximately 5m in width. Structurally, K1 and K2 veins are similar but mining to date by K92ML in both veins has indicated variable ground conditions, ranging from poor to good. Mining in K1 has revealed poorer ground conditions compared to K2, due mainly to a fault structure on the western wall of the K1 vein. The instability associated with the fault requires that wall exposures are limited to a maximum of 5m in height. This has resulted in selection of cut and fill mining for K1 and also for KL, in either 2.5m high lifts mined by air-leg, or 5m high lifts mined by mechanised drill jumbo.

To-date K2 has also been mined by cut and fill, but this was for production assurance reasons. It is anticipated that the better ground conditions in K2 will suit a long hole stoping method. Although longhole stopes are considerably larger than for cut and fill, longhole stoping is still a relatively selective mining method which allows extraction of high grade, yet relatively narrow, ore zones. The proposed longhole stoping method for K2 is based on drilling and blasting ore in vertical rings from drives spaced 15m apart vertically, forming stopes 19m high. Stope widths will range from 3m to 14m and strike lengths will vary, depending on ground conditions. NB: The average MSO stope width is 6.4m but most are less than 8m in width as only 7% of the MSO stope shapes are greater than 8m wide. Stopes will be extracted along strike and in a bottom-up sequence, with each stope progressively backfilled for stability and to provide a working base for the next stope above.

There may be instances where localised poorer ground conditions necessitate cut and fill in K2. Similarly, if the western K1 fault is less prevalent than expected, improved conditions in K1 may allow longhole stoping. As further geotechnical information is obtained, a combination of the cut and fill and longhole stoping mining methods will be applied throughout the K1 and K2 resource.

### 16.1.2 Dilution

For the purpose of determining cut-off grade for longhole stope mining, an initial estimate of dilution of 35.0% was based on 0.5m external dilution skins on the hangingwall and footwall of a minimum 2.0m stope design width, for an overall 3.0m wide stope including the dilution. Further 0.5m floor dilution is planned due to the requirement to backfill as the longhole stope is progressed. For cut and

fill mining, the dilution of 28.9% applied for cut-off grade calculation was based on 0.3m external dilution skins on the hangingwall and footwall of a minimum 2.0m stope design width, for an overall 2.6m wide stope including the dilution. Further 0.5m floor dilution is planned due to the requirement to backfill as the longhole stope is progressed. The dilution skin allowances are intended as an average based on AMDAD's understanding that the stope hangingwalls and footwalls are in variable ground conditions, from poor to moderate, and strongly influenced by the existence of sub-parallel shear zones. As stated in the preceding subsection the average width of K2 MSO shapes is 6.4m and the K1 stopes average is 4.6m. At these widths the nominated dilution skins represent a lower percentage of dilution than for the minimum width stopes on which the cut-off calculation was based. The stope widths used for COG calculation prior to the MSO runs therefore results in a conservative COG. Further mining studies should use a range of stope widths and variable COGs for stope optimisation. Please also note that: -

- a program of geotechnical review should be completed before further studies and optimisation work are undertaken., and
- The estimated tonnes and grades in the life of mine schedule incorporate stope dilution based on the nominated dilution skins, and not by applying the percentages of dilution that were estimated for the purpose of determining the cut-off grade.

### 16.1.3 Kora North Phase Evaluation Method

To prepare a conceptual mine plan AMDAD applied financial and processing parameters to determine cut-off grades for stope design, generated 3-D stope shapes using the CAE Mineable Shape Optimiser (MSO) program, and created a conceptual development layout to suit the MSO stopes. Based on the resource within the stope shapes, with allowances for dilution and mining loss, AMDAD also produced a simple mining schedule as input for a conceptual project cashflow model.

Key project assumptions for determining the gold stoping cut-off grade for the Mineable Shape Optimiser ("MSO") modelling are summarised in the table below. The inputs were based on data provided by or confirmed by K92ML for both cut and fill mining and 15m high longhole stoping, after discussion and agreement with K92ML.

**Table 33: Key project assumptions for Kora North Phase stope cut-off grade**

PHYSICAL INPUTS		Unit	Assumption	
Mining Method			Cut and Fill	Longhole stoping
Mining Dilution		%	28.9	35.0
Mining Recovery		%	90.0	85.0
Process Rate		ktpa	200, then increase to 400 during 2020	
Process Recoveries	Gold	%	94.0	
	Copper	%	92.0	
FINANCIAL INPUTS (USD \$)		Unit	Assumption	
Base Mining Cost for cut-off purposes		\$/t ore	83.23	67.72
Processing cost		\$/t ore	23.85	
General and Administration cost		\$/t ore	35.30	
Total Opex			142.37	126.86

Metal Price	Gold	\$/oz	1300
	Silver	\$/oz	15.00
	Copper	\$/lb	2.90
Realisation Costs (Selling Costs) Payable:	Gold	\$/g au	1.78
	Silver	\$/g ag	0.042
	Copper	\$/t cu	321.1
Royalty		%	2.25

AMDAD built up the base mining cost from unit costs provided by K92ML. These costs are based on extraction by cut and fill and longhole stoping using the Avoca method. Please note, the operating costs used for the MSO work are based on a 400ktpa operation. For the end of 2018 and ramp up period during 2019 higher operating costs are used in the evaluation model, which are based on the historic costs during 2018 and the K92ML 2019 budget.

#### 16.1.4 Kora North Phase Cut-off Grades

The cut-off grade applied in the MSO program was determined using the mining, processing and economic assumptions listed above. It was calculated using a mining cost that covers all costs downstream from establishment of the stope that would be incurred by each potential incremental tonne of ore that could be included within the stope shape. This is the “marginal economic cut-off grade”, which will maximise the undiscounted cash value of the operation when it is applied at the point for which the downstream costs have been determined.

The cut-off grade calculation defines a head grade cut-off as well as a resource cut-off which also makes allowance for dilution.

**Table 34: Kora North Phase Gold Equivalent Cut-off grades**

Parameter	Unit	Cut and Fill	Longhole stoping
Net value of Au in ore	US\$/g	39.29	
Cut-off head grade	g/t AuEq	3.62	3.23
Cut-off resource grade	g/t AuEq	4.61	4.31

The cut-off shown in the table above is a gold equivalent cut-off that is applied to gold equivalent (AuEq) grades that AMDAD assigned to the mining block model using the gold, silver and copper grades and associated realisation charges. The AuEq grade is used for MSO stope shape creation.

#### 16.1.5 Kora North Phase Development Concept

The mine plan makes use of existing Irumafimpa development and recent Kora North Phase exploration development, and in particular the existing incline, to provide access to the orebody for stope production activities. However, stope production is also dependent on excavation of the following new development:

- Cross cuts from the existing development and new decline and incline to levels, spaced at 15 metres vertically
- A footwall drive established on each level, with ancillary development including stockpile bays, loading bays, access to ventilation rises and crosscut access to both K1, KL and K2 stopes

- A dedicated footwall drive on 1185mRL and hangingwall drive on 1170mRL, both for exhaust ventilation.
- Orebody strike-drives for both K1, KL and K2
- Access drives adjacent to orebodies along adjacent veins where available.
- Miscellaneous development including recesses for sumps, and drill cuddies.

### 16.1.6 Kora North Phase Backfill Strategy

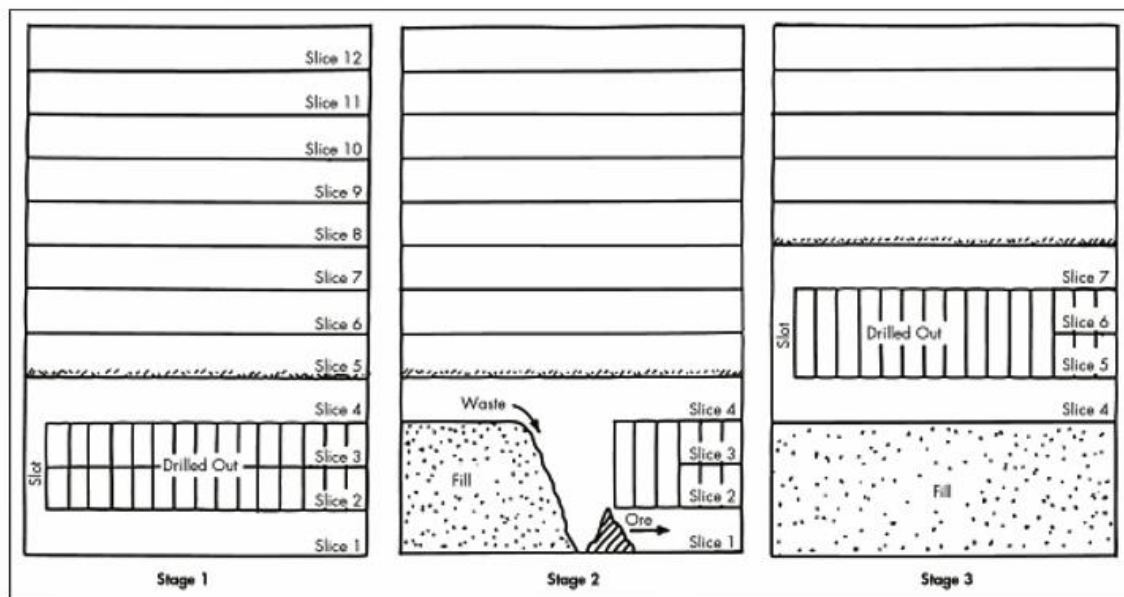
#### Fill Source

Waste rock from Kora North Phase development mining will be the primary backfill material when available. Exploration development or surface waste rock will be alternative fill sources when local development waste is unavailable.

#### K2 Longhole Stoping

As depicted in the following figure, waste rock backfill for K2 longhole stoping will closely follow the stope blasting face to reduce the strike length of hanging wall and footwall left open at any time (Figure 67). The void is filled from one end of the stope with dumped waste rock while ore is being extracted at the other end. A gap is maintained between the filling and extraction fronts to minimise dilution.

In poor ground conditions, Modified Avoca longhole stoping will be required, whereby the waste backfill is placed tight against the stope blasting face to maximise support for the stope walls.



**Figure 67: Avoca Longhole stoping method**  
(Bullock and Hustrulid 2001)

#### K1 and KL Cut and Fill

As shown in the figure below a 2.5 or 5.0m high slice of the mineralised vein is drilled and blasted, then mucked with a load-haul-dump (LHD) unit. Once all ore from a slice has been loaded out, waste rock is trammed back into the void by LHD, to build up a platform from which to extract the next slice of ore. The top of this waste rock will become the floor of the next lift in the mining sequence.



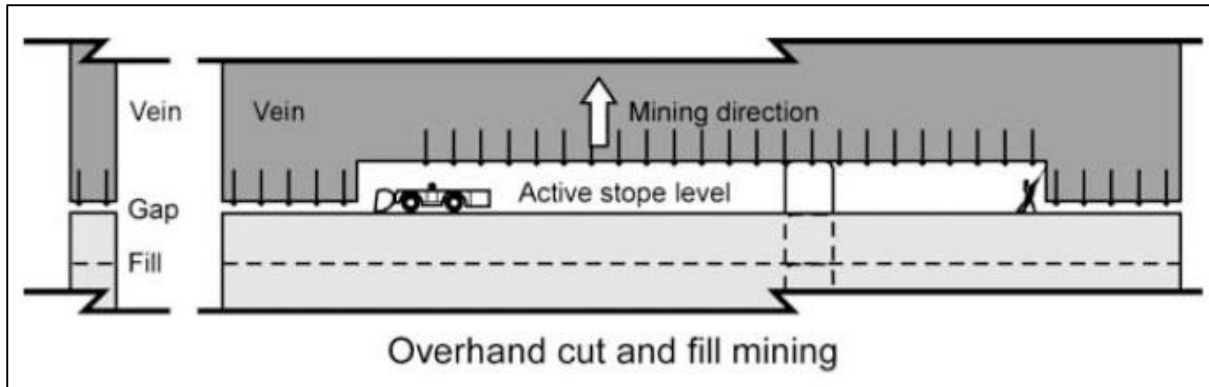


Figure 68: Cut and fill method

### 16.1.7 Kora North Phase Ventilation

The ventilation plan, proposed by K92, is an extension of the current ventilation network used at Kora North. The key aspects of this plan are outlined below:

- Kora North is currently ventilated by two 55 kW fans which draw approximately 60m<sup>3</sup>/s of fresh air from the 800L portal through the mine to the 1300L Puma Exhaust adit. A twin 45kW fan set-up at the 1180mRL “switchback” corner of the 800 Decline and Puma Incline, force ventilation into the workings on the 1185mRL.
- On commencement of development of each level, secondary Fans, 45kW; 1000V will be installed in sublevel access development off the Kora North incline and decline to service each active level, by forcing fresh air into the level via ventilation ducts.
- The ventilation system will be upgraded in three stages over the duration of the project:
  1. Stage 1: Already in progress and catering for Kora North Phase
    - A Return Air Drive (RAD) is currently being developed south-wards from the Puma Incline parallel to the 1185mRL Footwall Drive. Return Air Rises (RARs) will be linked to this drive to extract return air from the production levels above and below this RAD.
    - A similar RAD with RARs will be developed parallel to the Hangingwall Drive to cater for the K2 stopes. A 90kW extraction fan will be installed where the RAD drive connects to the Puma Incline to cater for the increase in ventilation requirements as the mine workings expand. As part of this ventilation system upgrade, a set of ventilation doors will be installed on the Puma Incline at the 1185mRL just south of the RAD intersection. As a result, all intake air will be channelled to the Kora North workings and return through the RAD.
    - In addition, the main extraction fan system at the 1300L Puma Exhaust Adit will be relocated and a third 55kW fan added which will increase capacity by 30% from 60m<sup>3</sup>/s to 78m<sup>3</sup>/s. As the Kora North workings expand a fourth fan will be added to maintain sufficient ventilation capacity.
  2. Stage 2: Bottom Part of Kora
    - Two connecting drives will be developed south from the Kora North deposit to the Kora deposit. Fresh air will be forced through the bottom drive and the workings, similar to the Kora North and extracted through the top drive and the RAD.
    - When the Kora Phase Incline reaches the 1510m RL, it will link up with a connection drive planned between the old Irumafimpa workings and the Kora Incline. This drive

will become the replacement RAD. Stripping of the Irumafimpa development may be required to facilitate adequate air flow.

3. Stage 3: Ventilation of Kora Phase– see Section 16.2.6 below.

The ventilation concept is shown in the following figures;

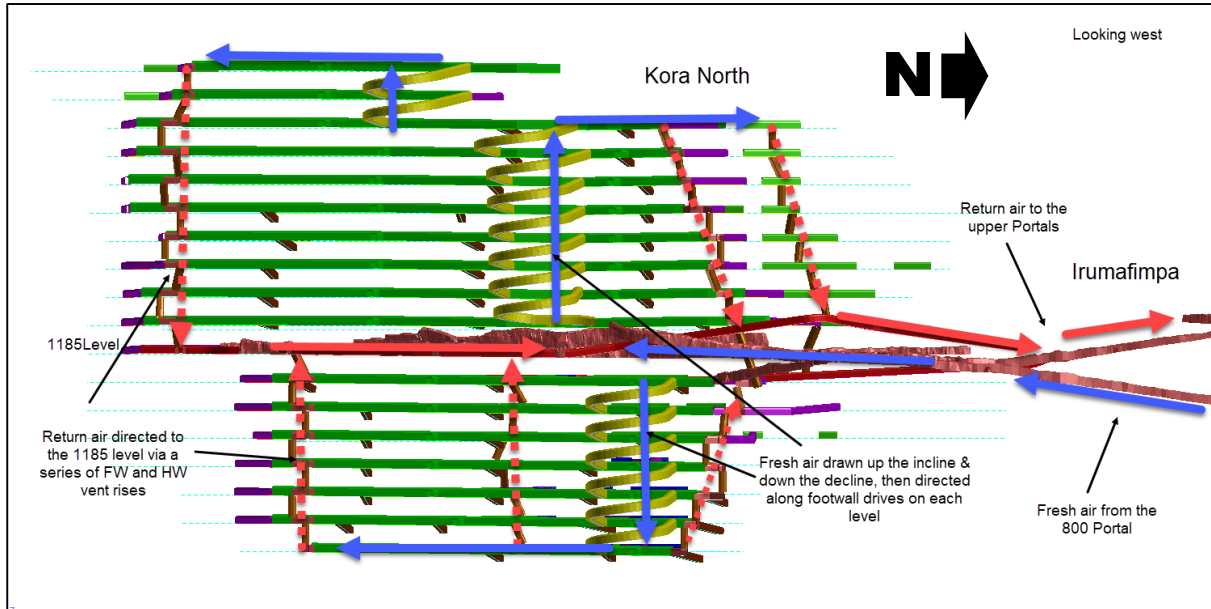


Figure 69: Longitudinal view of Kora North Phase ventilation network

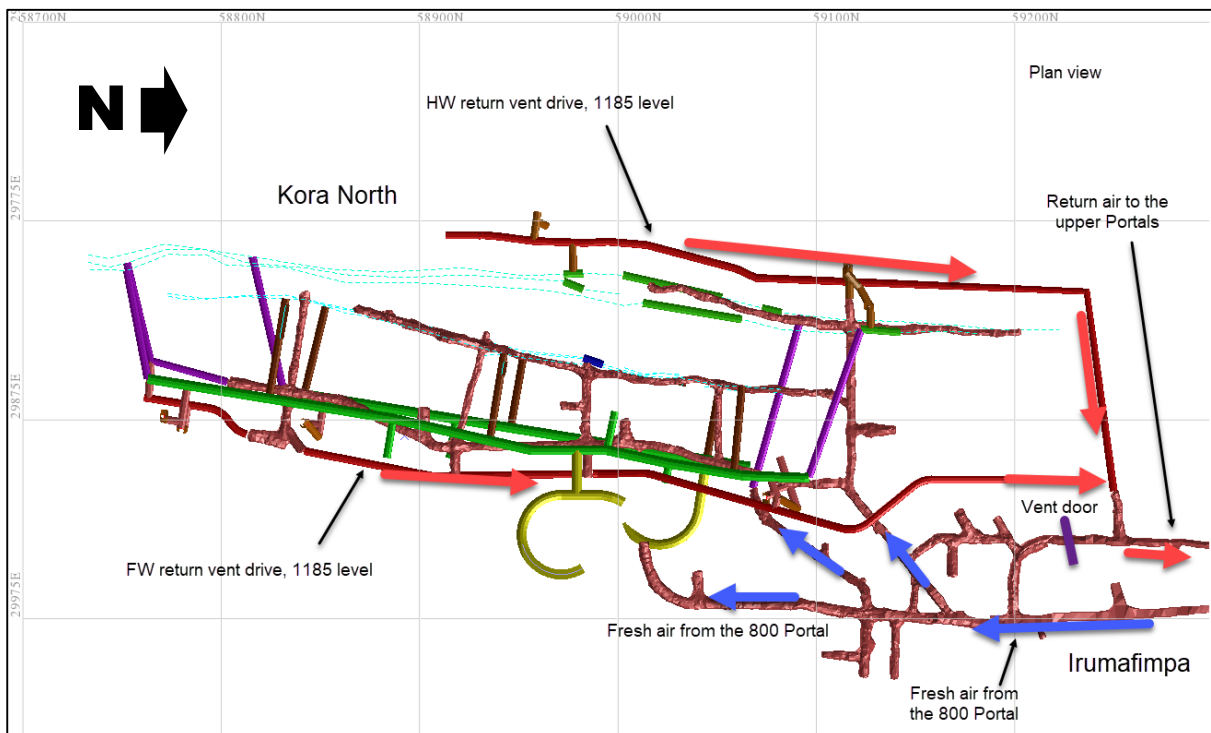


Figure 70: Plan view of Kora North Phase ventilation network at 1185mRL

### 16.1.8 Kora North Phase Stope Design

AMDAD used the MSO module in CAE Studio 3 to prepare a conceptual stope design for Kora North Phase. MSO automatically produces stope shapes from the resource block model that are economically optimised within specified geometrical and design constraints. Design parameters are tabulated below. To assist in the stope shape formation, the geological wireframe ([kora\\_new\\_k1\\_k2\\_interp\\_sjt\\_231018.dtm](#)) was also used with the MSO software.

**Table 35: Kora North Phase MSO Parameters**

Parameter	Units		K1/KL	K2
Optimisation Field			AuEq	
Default (waste) density	t/m <sup>3</sup>		2.80	
Sub-level Spacing	m (vertical)		5	15
Section Spacing (min)	m (horizontal)		10	
Minimum Stope Width	m		2.6	3.0
Maximum Stope Width	m		5.5	15.0
Minimum Waste Pillar Width	m		8.0	8.0
Hangingwall Dilution	m		0.3	0.5
Footwall Dilution	m		0.3	0.5
Number Stopes formed			1,104	523

The resultant stope shapes, prior to any adjustment, are shown in the following three figures. Corresponding estimates of resource tonnes and grade within the stope shapes totalling approximately 2.1 Mt, are summarised in the table below. Please note that this does not represent an estimate of Mineral Reserves.

**Table 36: Kora North Phase MSO unadjusted stope shape tonnes and grades**

Vein	Tonnes kt	AuEq g/t	Au g/t	Ag g/t	Cu %
K1	663	19.6	19.1	4.2	0.3
KL	53	14.1	13.3	11.2	0.5
K2	1,407	11.0	9.7	16.0	0.8
Total	2,123	13.8	12.8	12.2	0.5

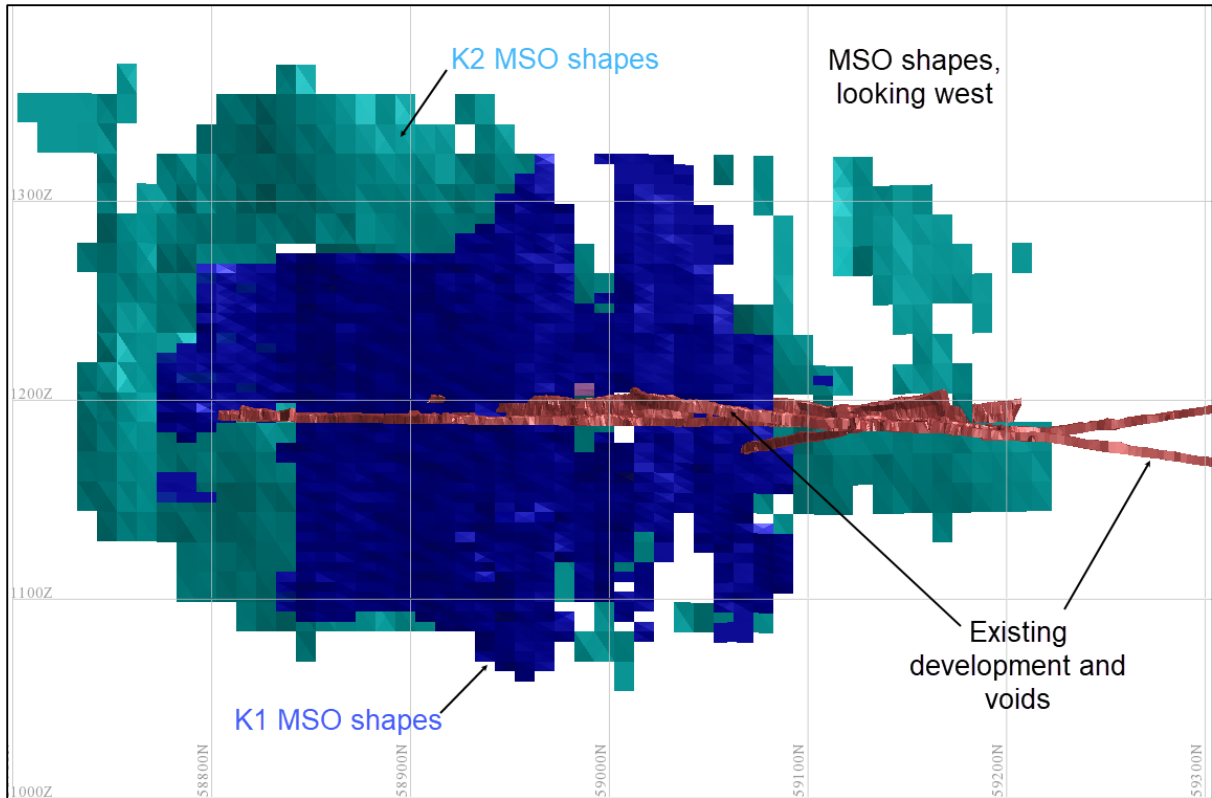


Figure 71: MSO shapes at Kora North Phase with current voids and existing development, longitudinal view

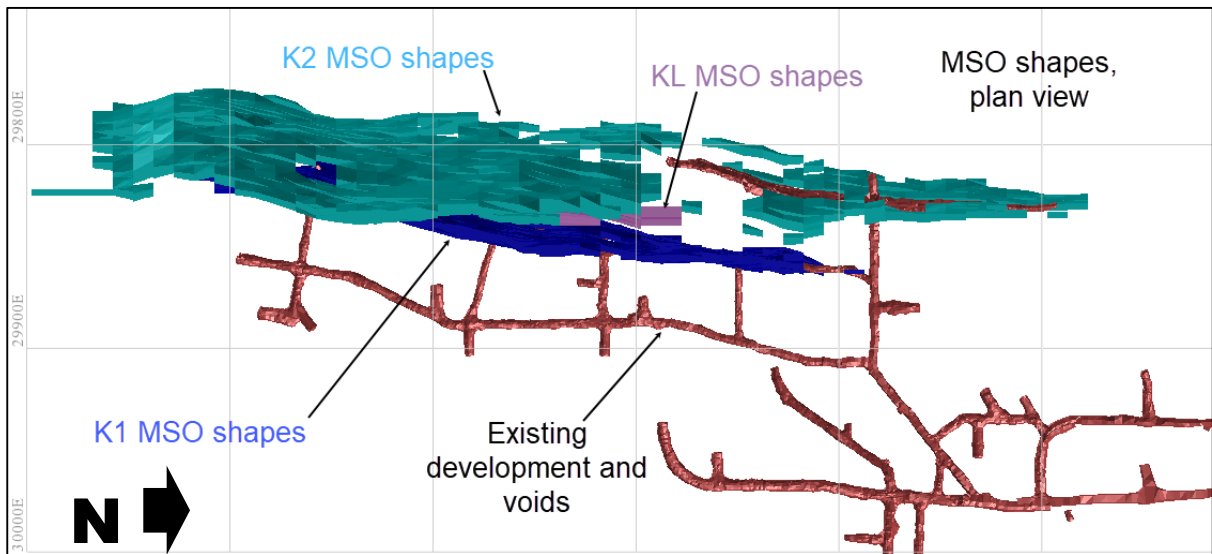
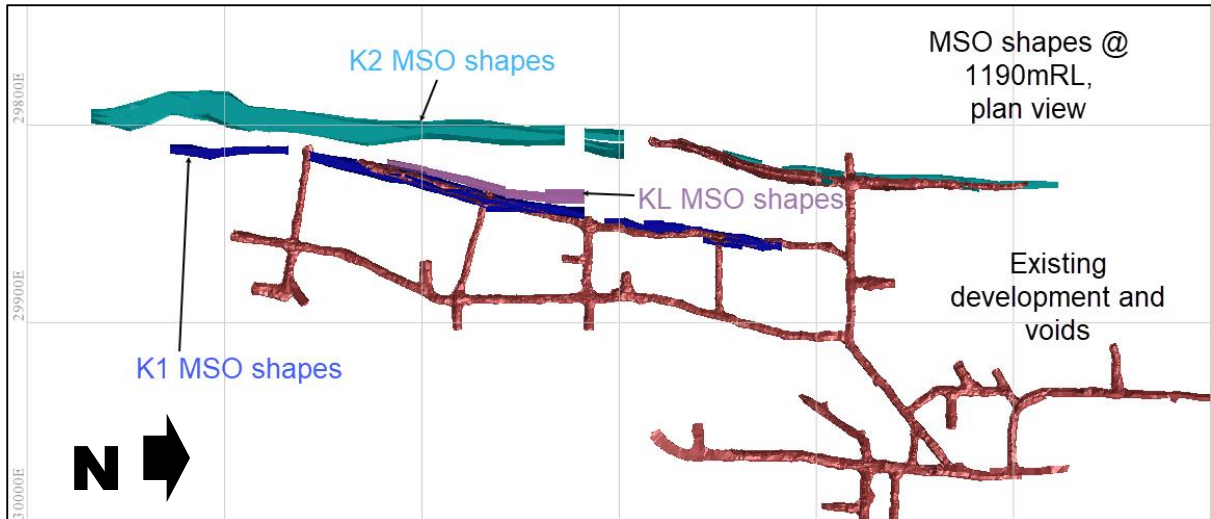


Figure 72: MSO shapes at Kora North Phase with current voids and existing development, plan view



**Figure 73: MSO shapes at Kora North Phase with current voids and existing development, plan view at 1190mRL**

For the purpose of the Kora North Phase LOM plan AMDAD subsequently selected a subset of these stopes, reducing the total to approximately 1.7Mt. The process to define these stopes takes into consideration the following criteria:

- Uneconomic stopes that don't pay for the access and development costs are removed
- Any MSO shapes created along the existing void mined above the 1185 Level are removed.
- K1 sill pillar tonnes removed. Two K1 sill pillars are required for the mining sequence, at 1150mRL and 1185mRL.
- Percentage of K2 stopes removed where regional pillars are required based on the mining sequence
- Additional external dilution added due to loading out ore against backfill walls and backfill floors. Assumed fill dilution is 6% for K1 cut and fill and 3% for K2 longhole stopes.
- Mining recovery applied; 90% for K1 cut and fill and 85% for K2 longhole stopes.
- K Link (KL) MSO shapes are not included in the LOM plan due to the close proximity to both K1 and K2 shapes and possible issues from ground conditions related to the KL structure. The KL resource should be reviewed in future studies and may provide additional mining inventory.

The revised subset of MSO shapes and quantities used for the LOM plan are shown in the figures and table below.

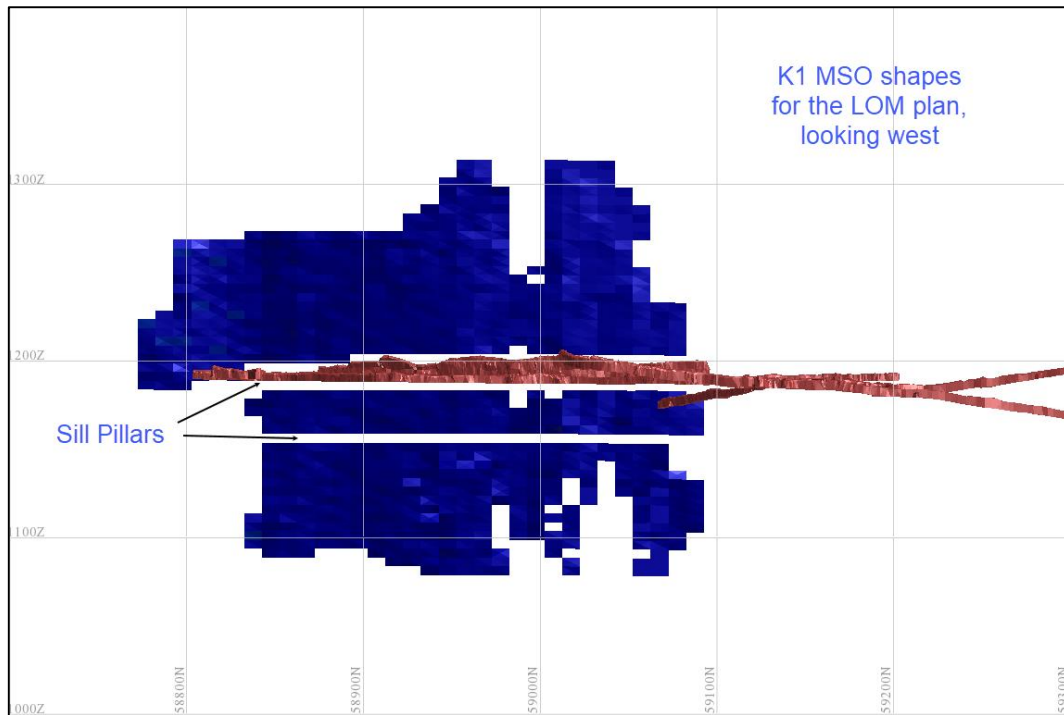


Figure 74: K1 MSO shapes for the LOM plan, longitudinal view looking west

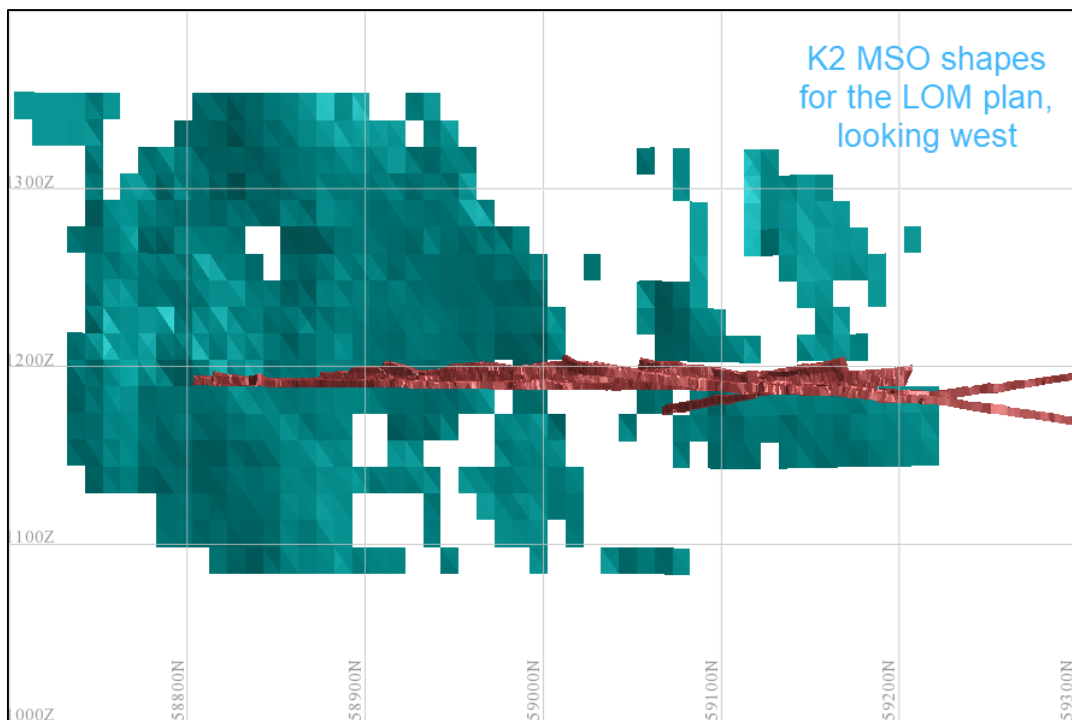


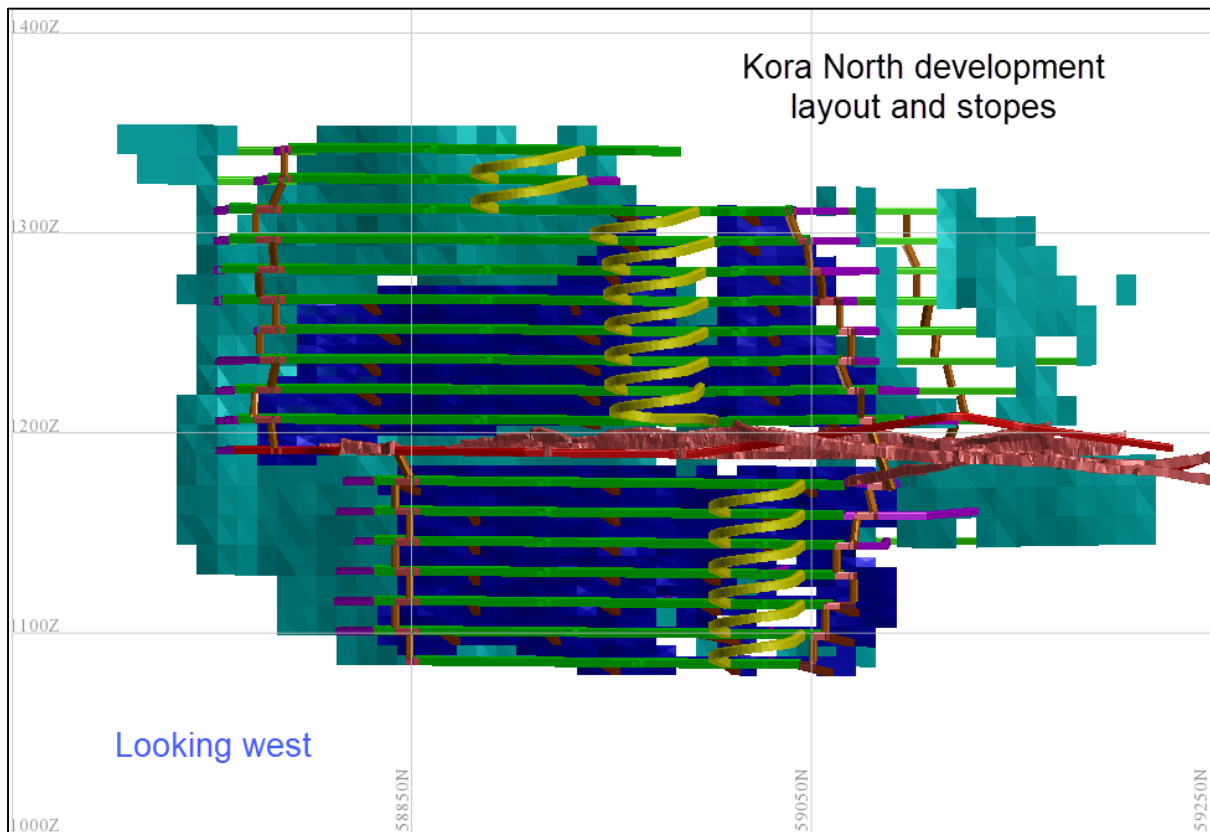
Figure 75: K2 MSO shapes for the LOM plan, longitudinal view looking west

**Table 37: Kora North Phase revised stope shape tonnes and grades for LOM schedule. This does not represent a Mineral Reserve estimate.**

Vein	Tonnes kt	AuEq g/t	Au g/t	Ag g/t	Cu %
K1	560	18.8	18.3	4.0	0.3
KL	Not included				
K2	1,152	10.8	9.6	15.4	0.8
Total	1,712	13.8	12.8	12.2	0.5

### 16.1.9 Kora North Phase Mine Development

AMDAD created a centreline development design for the LOM plan in consultation with K92ML personnel. This design is a continuation of K92ML’s current design concept currently being implemented for the initial exploitation of Kora North Phase. The development design is based on 15m vertical level spacing, providing access to both K1 and K2. The development layout is shown in the figure below;



**Figure 76: Kora North Phase Development layout, longitudinal view looking west**

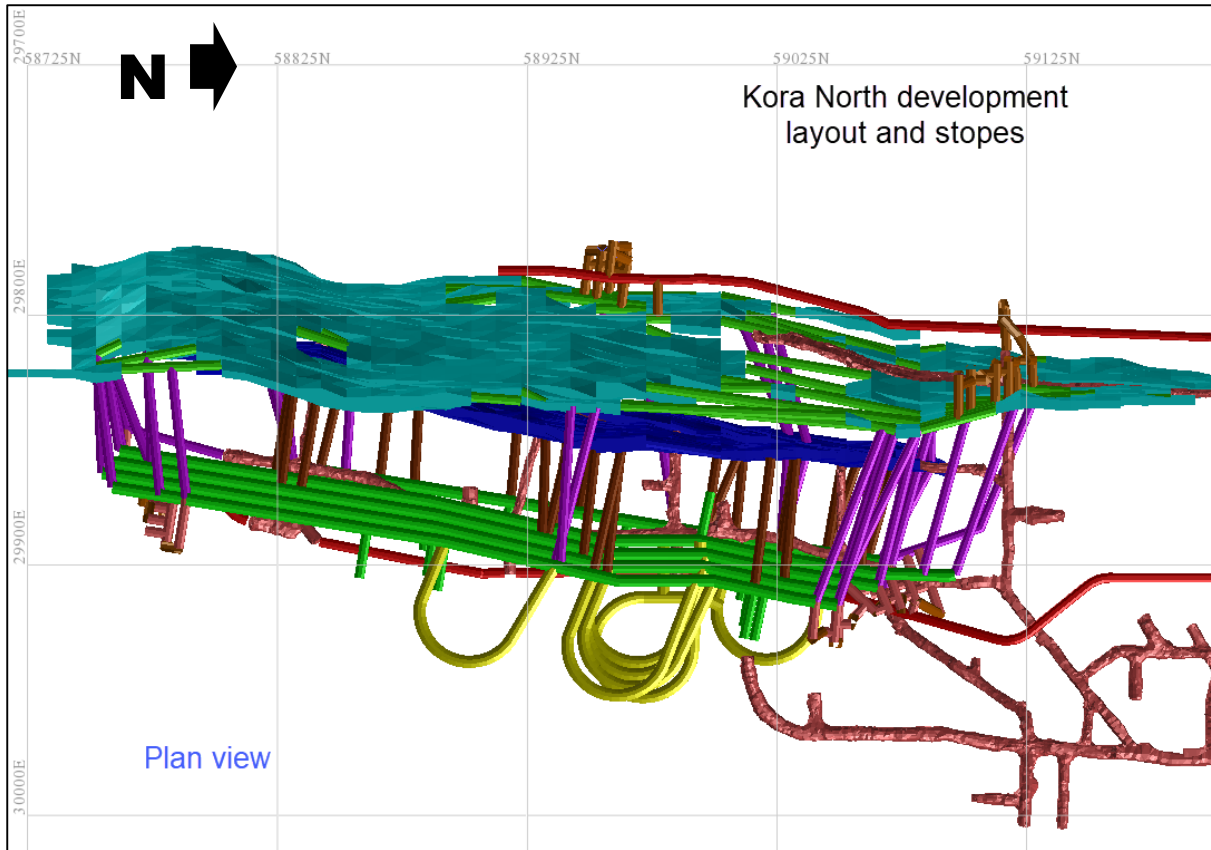


Figure 77: Kora North Phase Development layout, plan view

The development lengths are summarised in the table below;

Table 38: Kora North Phase development lengths (m)

Type	Length
Decline / Incline	1,825
Footwall drives	4,402
Stockpile/Loading bays	605
Crosscuts to K1 orebody	1,979
Crosscuts to K2 orebody	2,506
K1 orebody strike access development	286
K1 orebody sill development	8,730
K2 orebody strike access development	1,625
K2 orebody sill development	5,227
Ventilation access	2,060
<b>Total Lateral Development</b>	<b>29,244</b>
<b>Total Vertical Development</b>	<b>555</b>



### 16.1.10 Kora North Phase Life of Mine Schedule

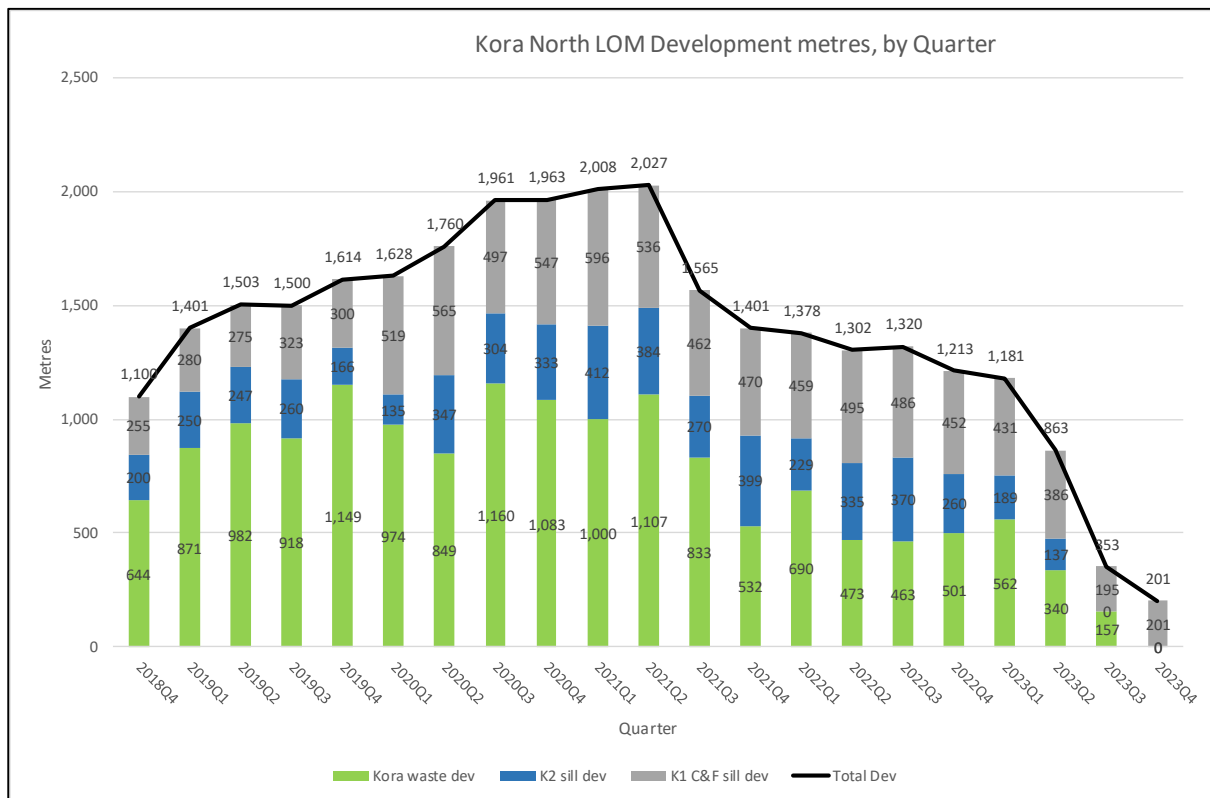
AMDAD prepared the LOM schedule in quarterly periods in consultation with K92ML personnel, and specifically aligned with K92ML's current Q4 2018 to Q4 2019 schedule. The Kora North Phase LOM plan is based on the following targets;

- Produce 26kt of mill feed during Q4 2018 then ramp up to 50kt during Q2 2019.
- Continue producing at 50kt/Qtr for the remainder of 2019 whilst accessing additional stope areas in preparation for a production ramp-up.
- Ramp up production during Q1 2020, in line with the proposed Mill expansion and produce 100Kt/Qtr from Q2 2020 onwards.

Mine development is staged to match the production targets listed above. The table and charts below summarise the LOM development schedule.

**Table 39: Kora North Phase Development summary by year**

Type	Total m	2018Q4 m	2019 m	2020 m	2021 m	2022 m	2023 m
Waste	15,287	644	3,919	4,066	3,472	2,127	1,059
K1 sill	8,730	255	1,177	2,128	2,065	1,892	1,213
K2 sill	5,227	200	923	1,119	1,465	1,195	326
Total	29,244	1,100	6,019	7,313	7,001	5,213	2,598
m/mth		367	502	609	583	434	217



**Figure 78: Kora North Phase Development Schedule, by Quarter**

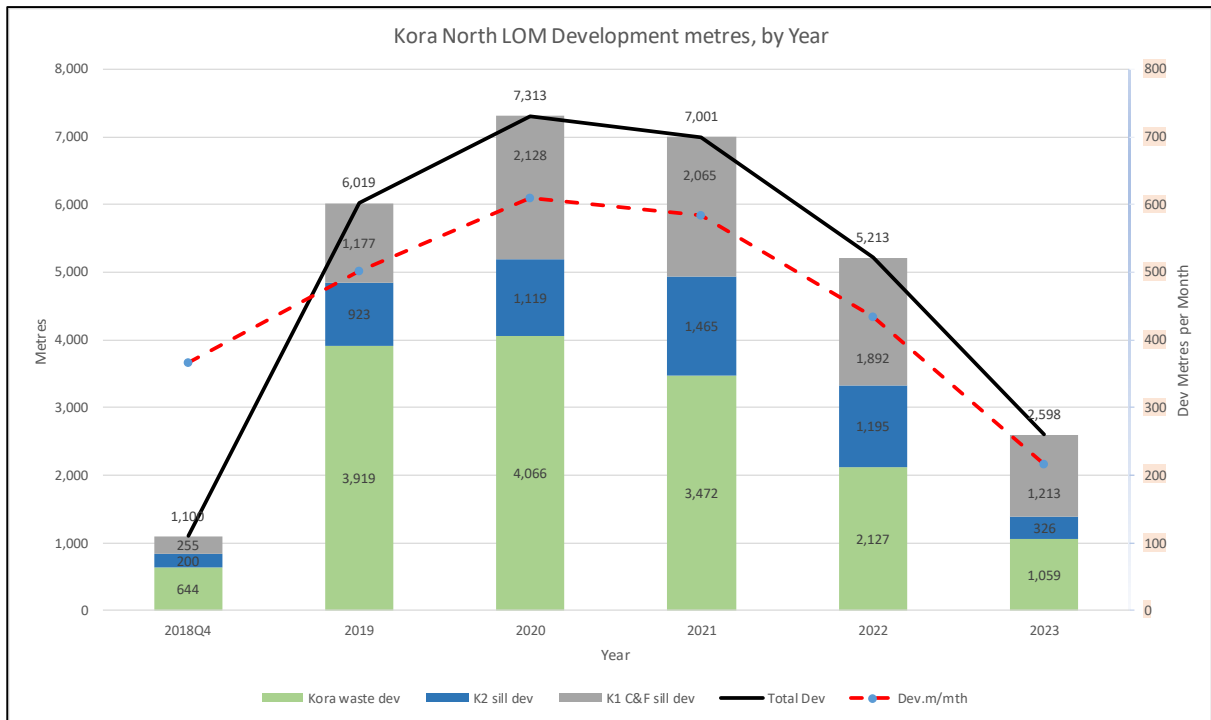


Figure 79: Kora North Phase Development Schedule, by Year

The table and charts below summarise the LOM Mill Feed schedule. These tonnes and grades do not represent a Mineral Reserve estimate.

Table 40: Kora North Phase Mill Feed summary

Type	Total kt	2018Q4 kt	2019 kt	2020 kt	2021 kt	2022 kt	2023 kt
K1	560	15	78	141	133	121	73
K2 dev	312	12	56	67	88	71	20
K2 stp	840	0	49	156	179	208	247
Total	1,712	26	183	363	400	400	340
Au koz.	685	12	79	145	144	145	161

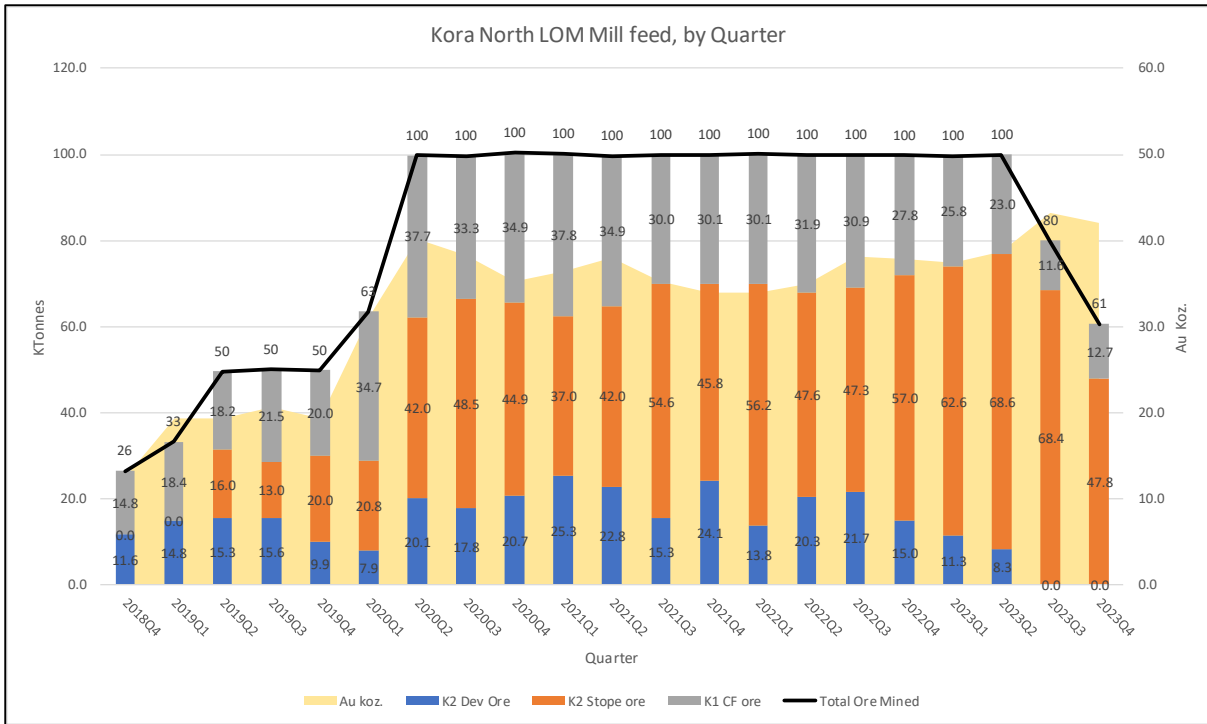


Figure 80: Kora North Phase Mill Feed Schedule, by Quarter

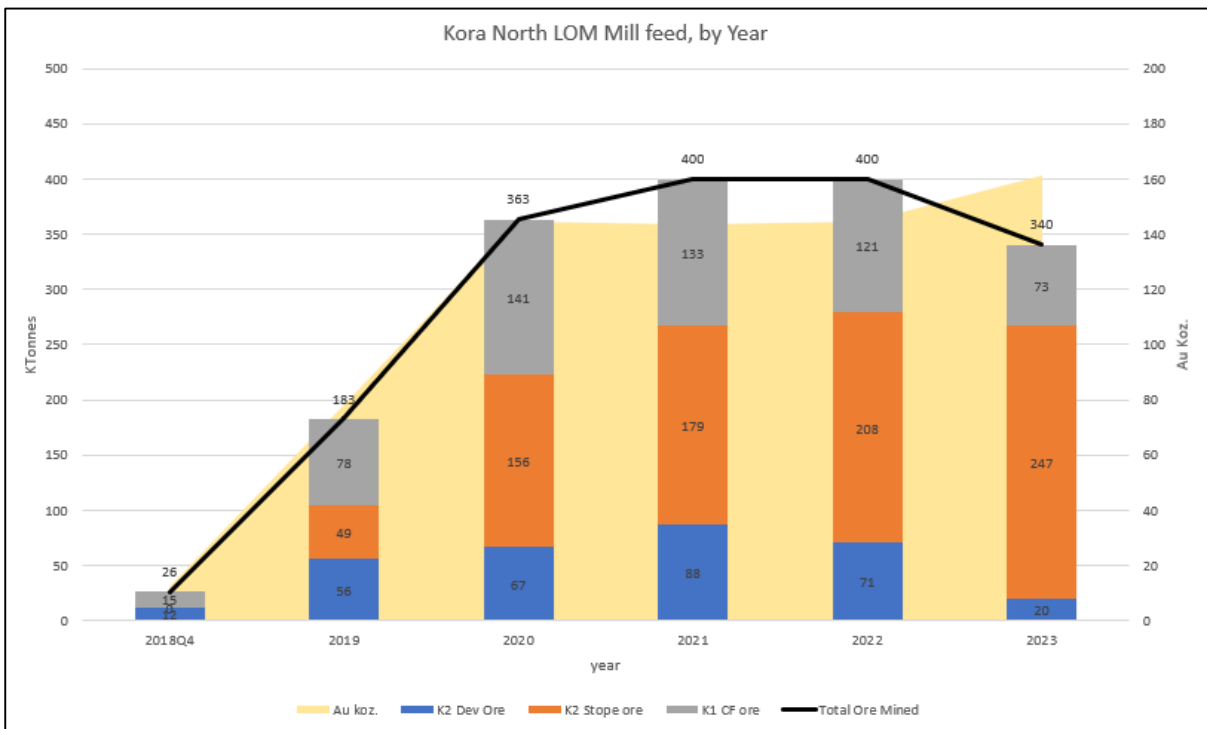


Figure 81: Kora North Phase Mill Feed Schedule, by Year

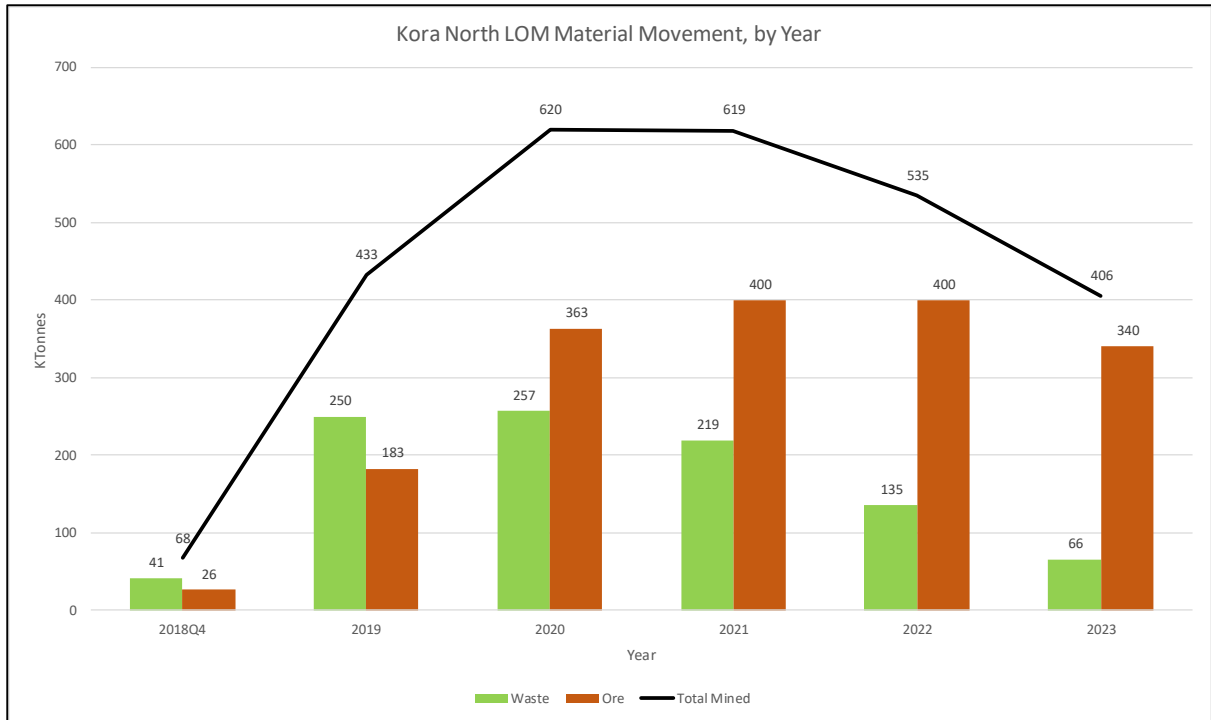


Figure 82: Kora North Phase Total Material Movement, by Year

## 16.2 KORA PHASE

### 16.2.1 Kora Phase Scoping Study Inputs

In September 2016 AMDAD prepared a conceptual Kora Mine Plan as part of a Scoping Study for the Kora deposit in consultation with K92ML (AMDAD, 2016).

As part of the Scoping Study AMDAD applied financial and processing parameters to determine cut-off grades for stope design, generated 3-D stope shapes and mining inventory using the CAE Mineable Shape Optimiser (MSO) program, and created a conceptual development layout to suit the MSO inventory. AMDAD also produced a simple mining schedule as input for a simple project cashflow model.

The conceptual mine plan prepared by AMDAD connects to the Kora North Phase development via a main access incline from 1213mRL to 1270mRL at Kora and an upper incline from 1340mRL to 1360mRL at Kora.

Key project assumptions that were applied in determining the gold equivalent stoping cut-off grade for the MSO modelling in 2016 are summarised below. The inputs were based on data provided by or confirmed by K92ML. Notional dilution and mining recovery factors were nominated by AMDAD after discussion and agreement with K92ML.

**Table 41: Key project assumptions for Kora Phase stope cut-off grade**

PHYSICAL INPUTS		Unit	Assumption
Mining Dilution		%	22.4
Mining Recovery		%	90.0
Process Rate		ktpa	400
Process Recoveries	Gold	%	91.5
	Copper	%	91.5
	Silver	%	90.0
FINANCIAL INPUTS (USD \$)		Unit	Assumption
Base Mining Cost		\$/t ore	87.7
Processing		\$/t ore	17.7
General and Administration		\$/t ore	30.0
Metal Price	Gold	\$/oz	1300
	Copper	\$/t	4800
	Silver	\$/oz	18
Realisation Costs (Selling Costs) Payable:	Gold	%	97.7
	Copper	%	97.0
	Silver	%	90.0
Total concentrate costs		\$/dmt	270
Royalty		%	2.25

Whereas the parameters above were adopted to determine the cut-off grade for the MSO program, the final economic analysis of the Kora Phase deposit described in Section 22 Economic Analysis incorporates a further revision to Mining, Processing and G&A costs and updated metal prices, as advised to AMDAD by K92ML.

### 16.2.2 Kora Phase Cut-off Grades

A cut-off grade was estimated using the mining, processing and economic assumptions listed in Table 41. As for Kora North Phase this is the “marginal economic cut-off grade” which will maximise the undiscounted cash value of the operation when it is applied at the point for which the downstream mining costs have been determined (Table 42).

The cut-off grade calculation also makes allowance for dilution. The applied dilution of 22% was based on an allowance of 0.5m for fall off on the stope hangingwall and footwall. This equates to 20% dilution for an average 5m stope design width, resulting in an overall 6m wide stope including the dilution. A further 2% dilution was added to account for fall off of cemented fill and loading out on backfilled floors.

**Table 42: Kora AuEq Cut-off grades**

Parameter	Unit	Value
Net value of Au in ore (USD)	\$/g	36.52
Cut-off head grade, AuEq	g/t	3.71
Cut-off resource grade, AuEq	g/t	4.52
Au equivalent factor for Ag		0.0125
Au equivalent factor for Cu		0.8959

AMDAD assigned gold equivalent (AuEq) grades using the gold, copper and silver grades and associated parameters.

### 16.2.3 Kora Phase Mining Method

The Scoping Study for Kora Phase is based on longhole stoping. Production drilling and blasting of ore would be undertaken with vertical rings drilled from drives spaced 15m apart vertically, forming stopes 19m high. Stope widths will range from 2m to 8m and strike lengths will vary depending on ground conditions. Stopes will be extracted along strike and in a bottom-up sequence, with each stope progressively backfilled for stability and to provide a working base for the next stope above. The use of cemented fill will maximise recovery of the high grade ore.

No geotechnical information is available for the Kora deposit at present, and AMDAD adopted dilution and recovery assumptions from a mine plan prepared for Irumafimpa. AMDAD concluded that longhole stoping is likely to be an appropriate extraction method for Kora, provided that stope wall stability can be achieved by:

- Limiting stope strike span
- Use of cemented backfill for increased recovery and wall stability
- Use of cable bolting where required
- Attention to sub-parallel shears in stope walls
- Taking care not to undercut stope walls
- Careful management of drill and blast practices

### 16.2.4 Kora Phase Development Concept

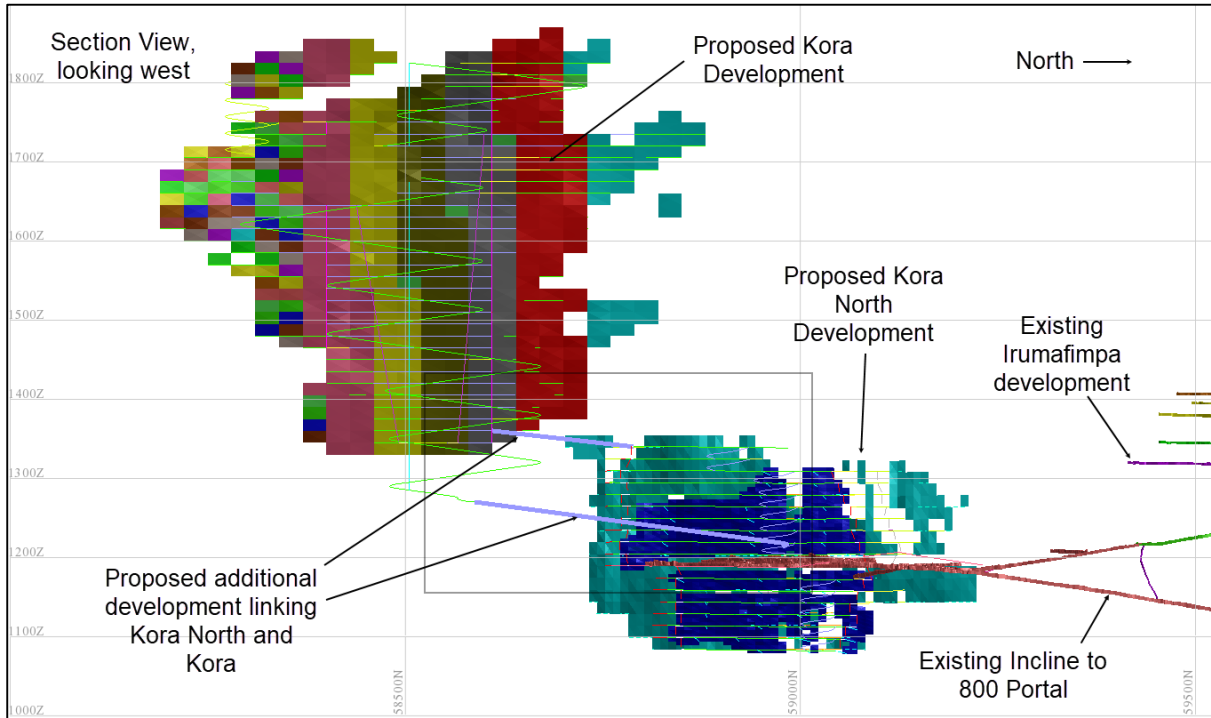
The conceptual mine plan for the Kora Phase proposed by AMDAD incorporates the existing decline development at Irumafimpa and the proposed Kora North Phase development, as described in the section 16.1 above:

- A centrally located incline commencing from both Kora North connection development at 1270mRL and 1360mRL, and mined to the top of the resource at 1825mRL.
- Access development to the orebody at 15m level intervals.
- Footwall drives extending to the northern and southern ends of the deposit, providing flexibility of access for multiple concurrent ore sources on each level.
- Orebody drives at the base of each stope on each level
- Loading and stockpile bay development on each level.

Ventilation requirements would include a central fresh air rise (FAR), collared at surface, which would also provide a secondary means of egress to the surface. Fresh air would be supplied via the Kora North development and the proposed FAR. Two return air rise systems would need to be established

between levels using the longhole rise method (LHR). These will remove exhaust air from Kora via the upper Kora exploration incline, or alternatively via an exhaust adit or raisebored exhaust rise at Kora.

AMDAD proposes that two ore passes be established up through the Kora deposit, with the base and loading point at 1270mRL. All ore would be loaded into trucks at the base of the ore passes and hauled down to the Irumafimpa 800 Portal. Haulage distance is approximately 3.1 km from the 1270mRL loading area to the 800 Portal. The Kora development concept is shown schematically in longitudinal section in Figure 83 and Figure 84 below.



**Figure 83: Longitudinal projection looking west showing proposed Kora Phase development.  
(in relation to existing Irumafimpa development and proposed Kora North Phase development.)**

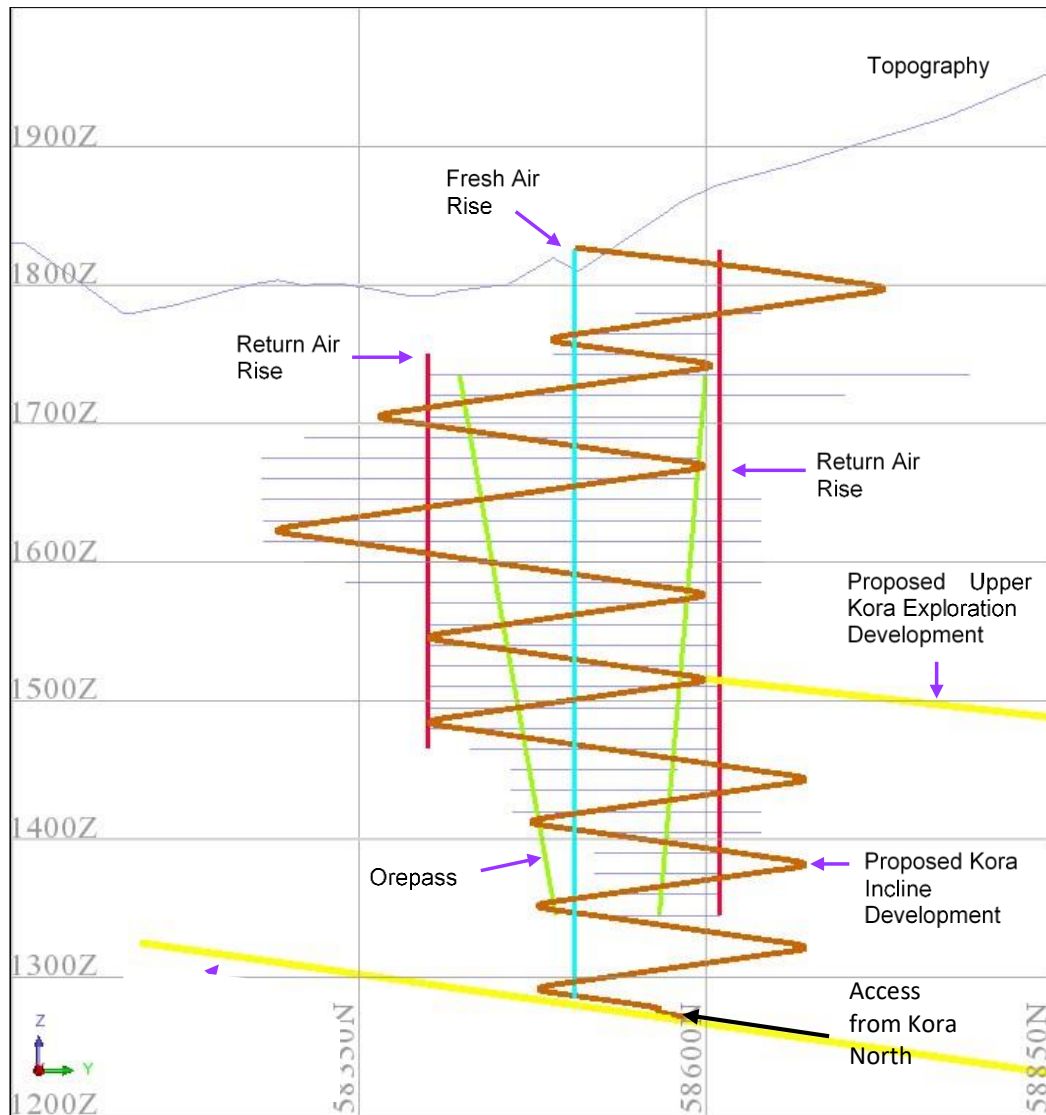


Figure 84: Kora Phase development concept, longitudinal projection looking west

### 16.2.5 Kora Phase Backfill Strategy

Waste rock from development mining will be the main source of backfill material. External sources such as quarried surface waste rock will be the alternative fill source when local development waste is unavailable. AMDAD has assumed use of cemented backfill where appropriate to increase the mining recovery of the Kora resource. Cemented backfill will reduce the requirement for in-situ rib pillars and regional pillars.

A second stoping panel will be required to increase the Kora production capacity. AMDAD has proposed the 1645mRL level as the base of this second panel. The backfill in stopes on 1645mRL will require a higher cement content compared to other longhole stopes so as to enable the mining of stopes immediately below on 1630mRL.

Analysis of cement content will be required for different stoping areas and a materials balance of waste rock mined to determine the quantity of external rock required as backfill. A simple cement addition system is proposed in which haul trucks loaded with waste rock would reverse underneath a cement slurry tank or hopper that would supply the required dosage of cement. Issues that will need



to be resolved for such a system include tipping arrangements at the stope, stope drive height required to accommodate truck tipping, and homogeneity of cemented rock fill mix.

#### **16.2.6 Kora Phase Ventilation**

The ventilation system for Kora will initially use the existing infrastructure of the Irumafimpa development and Kora North until the Kora primary ventilation system is established.

Additional forced ventilation is required in the upper exploration incline to facilitate mining of the Kora incline from 1510mRL upwards (Figure 85).

The proposed start of the Kora operations incline at 1250mRL is approximately 300m from the Kora North development. Forced ventilation will be required from the Kora North decline at 1213mRL for the Kora incline. Mining of the upper Kora operations incline at 1510mRL is approximately 890m from existing Irumafimpa development at the 1415mRL.

A raise-bored rise or Alimak rise would need to be developed at Kora between 1250mRL and 1510mRL to establish the primary ventilation system (i.e. intake air along the lower incline and return air out the upper exploration incline). An additional vent rise will need to be developed as soon as practical from the surface to the base of the Kora operations incline, approximately 540m in length. This would also provide a secondary means of egress from the mine. All development and longhole stoping at Kora will be able to be serviced by this primary system.

Fresh air would enter Kora via the lower Kora incline and FAR and be directed into level development by forced ventilation with secondary fans and ventilation ducting. Exhaust air would exit level development into the Northern and Southern RARs, and would exit Kora via the upper Kora exploration incline or alternative exhaust routes to the surface.

AMDAD believes that it may be necessary to strip the existing Irumafimpa 1415 Level to a larger profile for the primary vent system at Kora to operate with an effective pressure and airflow.

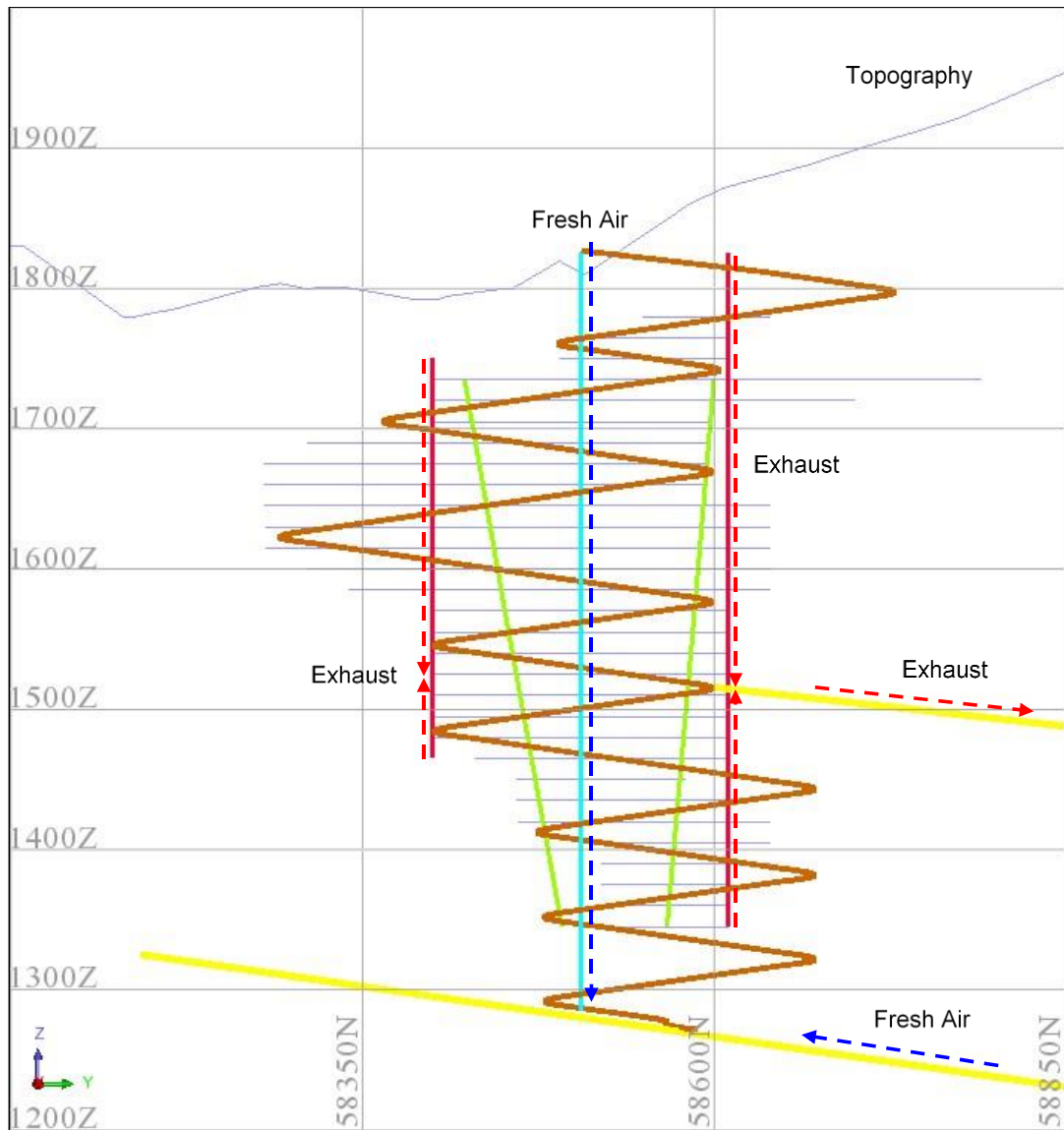


Figure 85: Ventilation concept for Kora Phase development

### 16.2.7 Kora Phase Stope Design

AMDAD used the MSO module in CAE Studio 3 for stope design. The stope parameters applied in the MSO modelling are tabulated below.

Table 43: Kora Phase MSO Parameters

Parameter	Units	Value
Optimization Field		AuEq
Cut-off grade	g/t	4.5
Default density	t/m <sup>3</sup>	2.80
Level Spacing	m (vertical)	15

Parameter	Units	Value
Section Spacing	m (horizontal)	30
Minimum Stope Width	m	2.0
Maximum Stope Width	m	8.0
Minimum Waste Pillar Width	m	8.0
Hanging Wall Dilution	m	0.5
Footwall Dilution	m	0.5

The MSO program generated 556 individual stope shapes ranging from 3,755t to 6,822t in size. The results, by vein, are summarised below. As for Kora North, please note that this does not represent an estimate of Mineral Reserves.

**Table 44: Kora Phase MSO stope shape quantities**

Vein	Tonnes kt	AuEq g/t	Au g/t	Ag g/t	Cu %
K1	2,298	9.2	7.1	26	2.0
K2	883	9.8	8.3	26	1.2
K5	9	5.3	2.2	53	2.7
J1	169	6.5	5.9	13	0.5
E4	145	6.2	4.6	22	1.5
<b>Total</b>	<b>3,504</b>	<b>9.1</b>	<b>7.2</b>	<b>25</b>	<b>1.7</b>

Figure 86 below shows the MSO stope shapes for the MSO run and Figure 87 shows a plan view of stope shapes and mineralized veins.

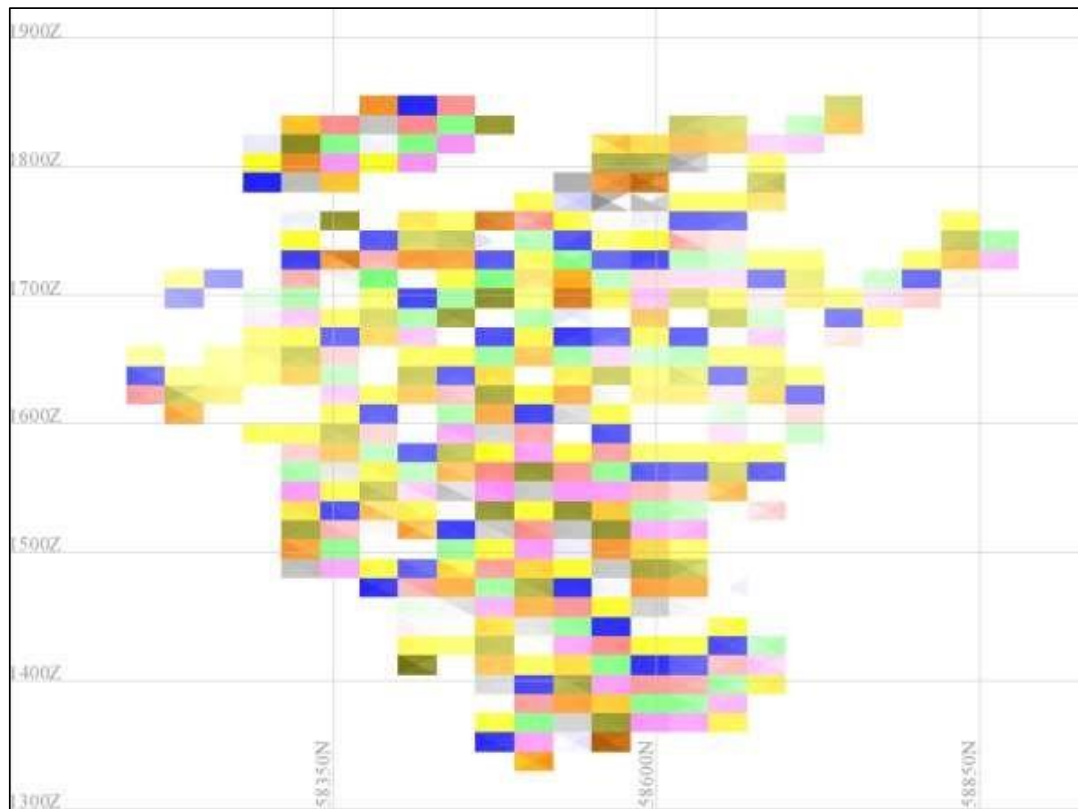


Figure 86: Kora Phase MSO shapes, 15m levels (longitudinal projection looking west)

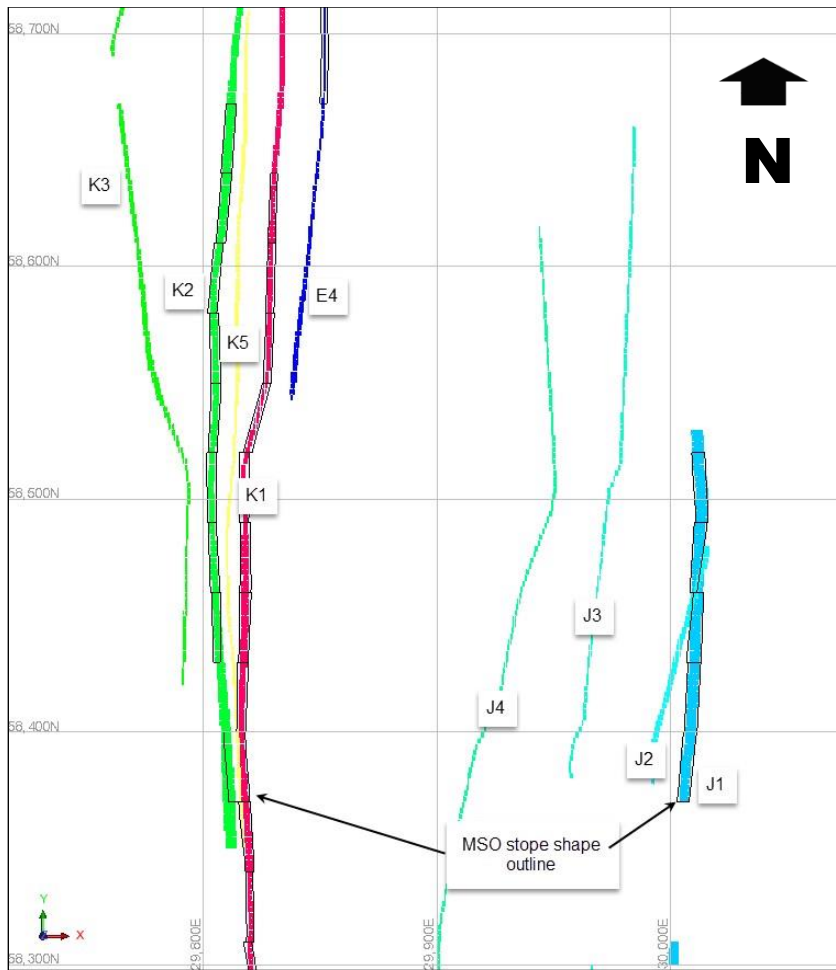


Figure 87: Kora Phase MSO stope shapes with mineralised veins, typical plan view at 1700mRL

### 16.2.8 Mine Design Quantities

The stope shapes created using the MSO program constitute approximately 3.2Mt, after mining recovery is applied. The access for these stopes will be from the base up, with a centralised incline developed from the Kora exploration drive spiralling upwards to the top of the Kora deposit, as described in Section 16.2.8.

AMDAD created a simple centreline development design in Surpac to estimate development lengths.

Table 45: Development lengths for 15m levels (m)

Development type	Length (m)
Kora Incline	4,212
Stockpile Bays	720
Level Access	3,567
Loading Bays/sumps/Cuddies	1,650
Footwall drive	6,463

Development type	Length (m)
Orebody access	1,627
Orebody drive	15,904
FAR access	80
FAR rise	540
RAR access	1,334
RAR rise	750
Orepass access	642
Orepass rise	788
<b>Total Lateral Development</b>	<b>36,108</b>
<b>Total Vertical Development</b>	<b>2,078</b>

### 16.2.9 Kora Phase Mine Schedule

The schedules prepared by AMDAD for the Kora stoping and development concepts used the following parameters.

**Table 46: Schedule Parameters**

Parameter	Value	Units
Incline Development	150	metres adv. /month
Maximum Development	800	metres adv. /month
Raise Construction		
Site Preparation and Rig Setup	60	Days
Drill Pilot Hole	10	m/day
Raise Reaming	3	m/day
Stoping Rates – applied to upper and lower horizons		
First Quarter	20	Kt/qtr
Second Quarter	40	Kt/qtr
Maximum Production Rate	60	Kt/qtr

The maximum development rate assumes that three development jumbos would be required to complete waste development, with each jumbo boring two faces per day at 85% availability.

The schedule prepared for the Scoping Study does not include the development required for the establishment of the upper exploration incline from Irumafimpa. This development is required for exhaust ventilation. Note, capital is included in the evaluation model for this development.

Year 1& 2 of the Kora phase of the project will involve: -

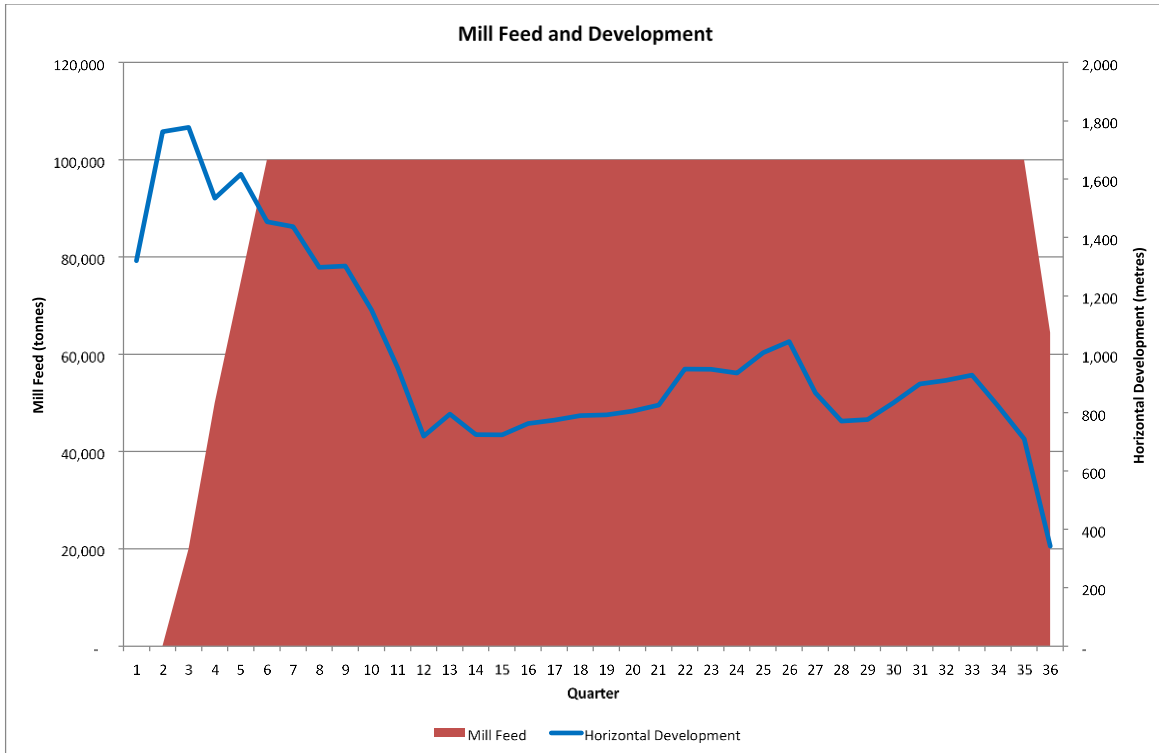
- Development of the Kora North Phase connection development.
- Development of the lower and upper sections of the Kora Phase operations incline from Kora North Phase connection development.
- Establishment of a ventilation circuit following the completion of the FAR and establishment of the Northern and Southern RAR using between sub-levels
- Establishment of initial stoping horizons in the lower levels above 1345RL

Year 3 of this phase of the project will involve: -

- Completion of the ventilation circuit as the lower portion of the Kora Phase operations incline connects to the upper incline, with exhaust via the upper exploration incline
- Establishment of the upper production block above 1615mRL at Kora
- Stopping rates increasing up to 100,000t per quarter

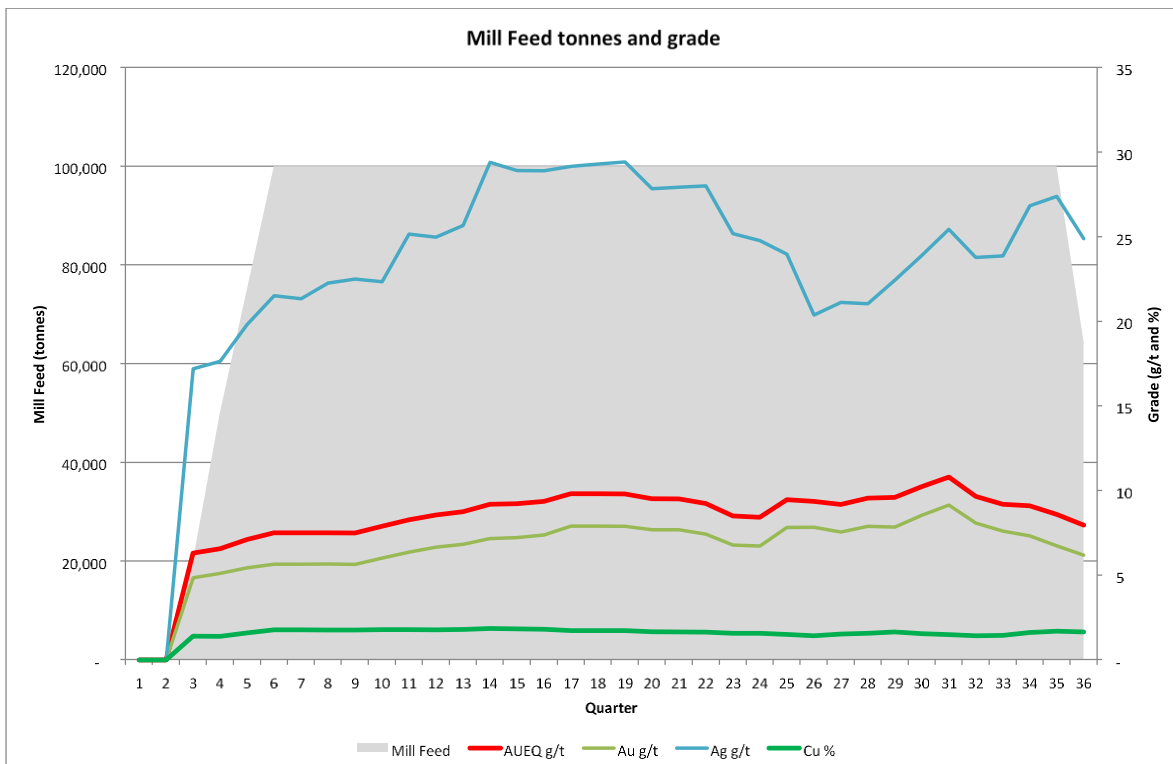
Production rates of approximately 50,000t per quarter are scheduled on both the upper and lower stoping horizons. Steady production is scheduled thereafter until production ends after 10 years.

Development is scheduled to establish ventilation early in this phase of the project, with the bulk of waste development completed after 3 years. Ore development then continues with stopes established on each level as the upper and lower stoping horizons advance upwards. Future evaluation work will optimise development sequencing by delaying waste development, and deferring waste development costs wherever possible.



**Figure 88: Kora Phase Mill feed tonnes and development metres**

Production from stopes commences in the third Quarter. Production on the upper and lower stoping horizons gradually increases until this area produces the target production rate of 400,000 tpa after seven Quarters.



**Figure 89: Kora Phase Mill feed tonnes and grades**



### 16.3 KORA NORTH PHASE AND KORA PHASE COMBINED LOM PLAN

Access to the Kora Phase mine will now be via the proposed Kora North Phase development, as shown in the figures below.

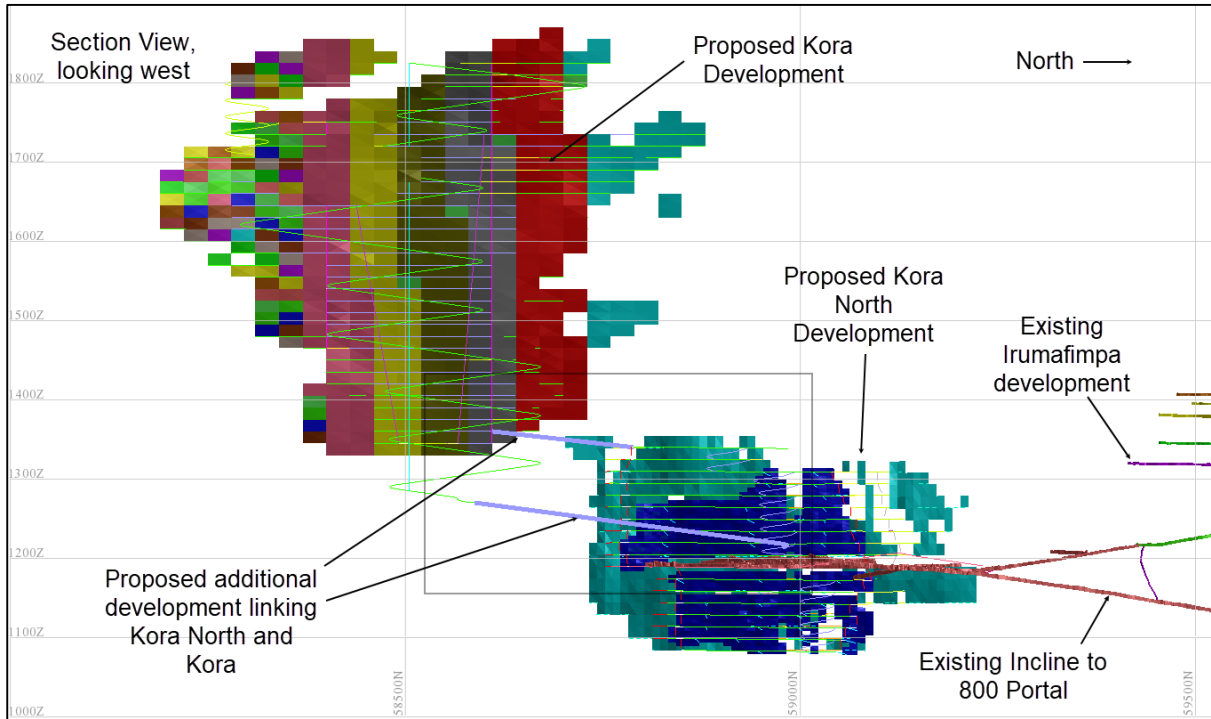


Figure 90: Combined Kora North and Kora mine layout

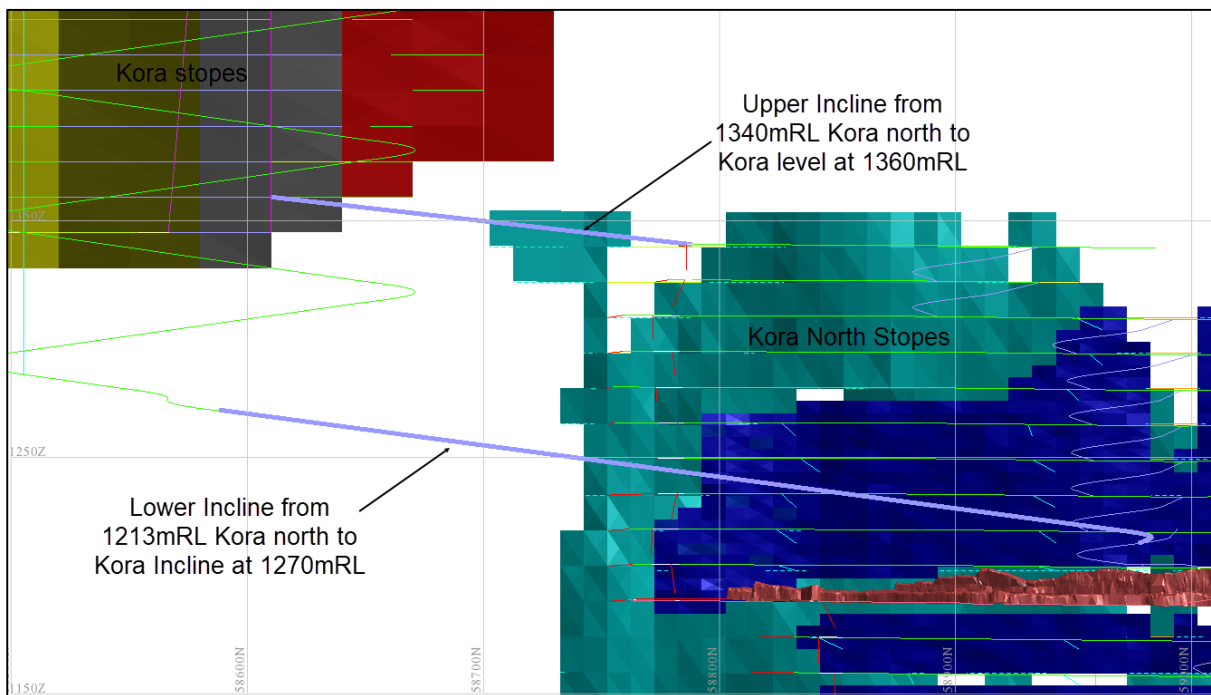


Figure 91: Access to Kora from Kora North

AMDAD combined the development and production schedule from both mine plans including the Kora North to Kora connection development. To provide a smoother combined yearly development schedule the Kora connection development at 1270mRL and Kora incline development are brought forward a year. The charts below show the combined development and production schedules, by year. As for the individual Kora North and Kora tabulations and charts, please note that this does not represent an estimate of Mineral Reserves.

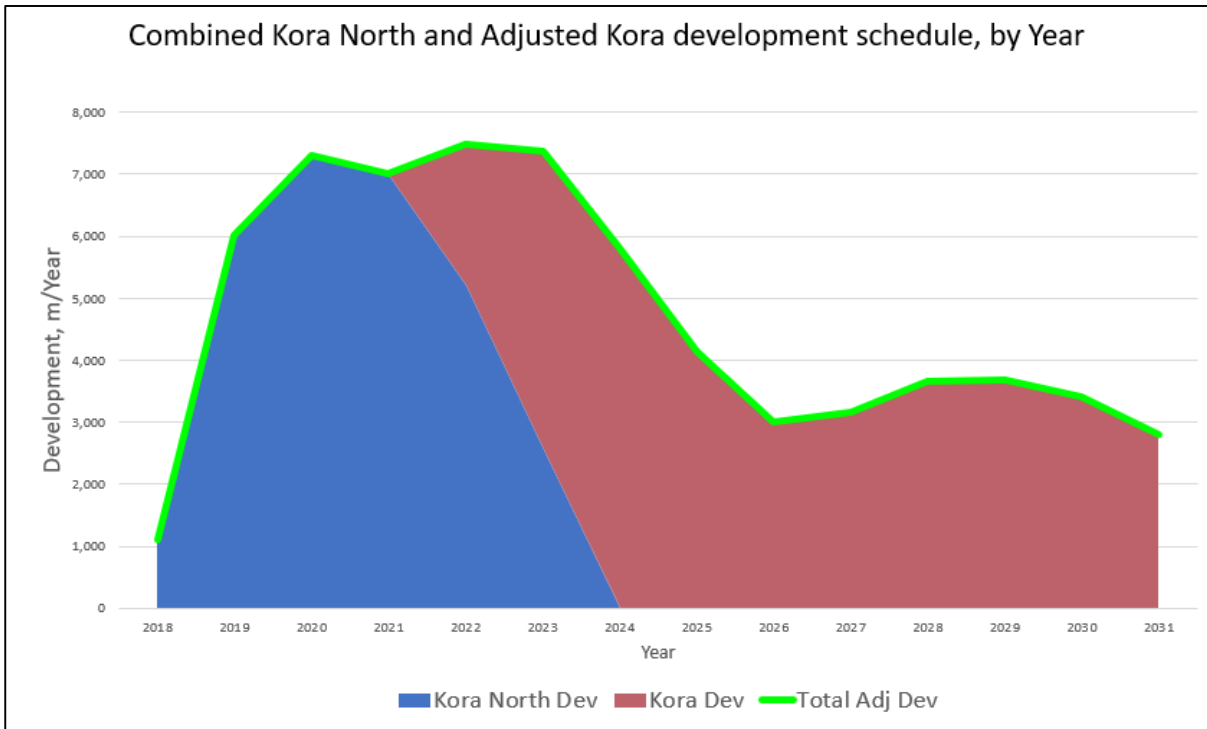


Figure 92: Combined Kora North and Kora development schedule, by Year

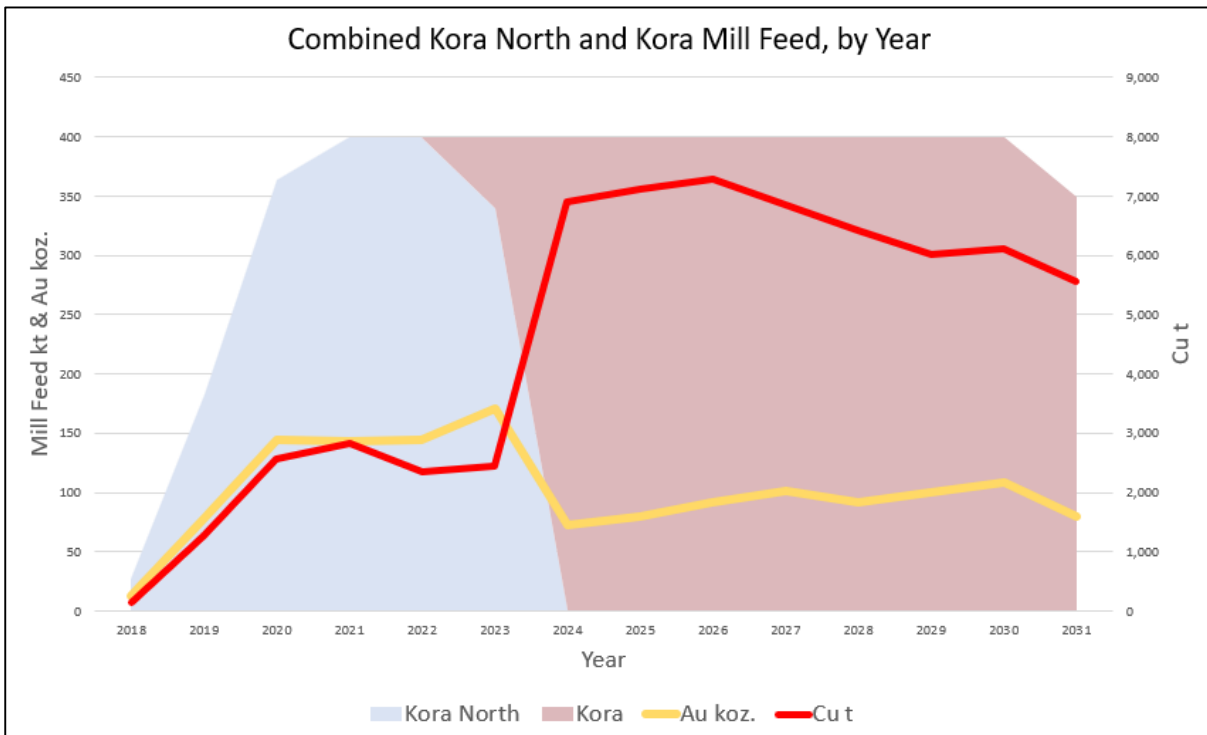


Figure 93: Combined Kora North and Kora Production schedule, by Year

The table below shows the resource category components of each deposit within the combined LOM schedule.

**Table 47: Resource category component with the Combined LOM plan**

Deposit	Measured	Indicated	Inferred
Kora North Phase K1	9%	35%	56%
Kora North Phase K2	1%	25%	74%
Kora Phase			100%

### 16.3.1 Risks and Uncertainty to Kora North and Kora Mine Plans

There is a high level of risk and uncertainty to achievement of the Kora North and Kora Mine Plans and estimated tonnes and grade presented above. Key risks and uncertainties and required further work are summarised in the table below.

**Table 48 Key uncertainties and risks, and further work requirements**

Area of Uncertainty and Risk	Discussion and Recommended Further Work
Mineral Resource	<ul style="list-style-type: none"> <li>All of the Kora Mineral Resource and a significant component of the Kora North Mineral Resource are classified as Inferred Mineral Resources. Inferred Mineral Resources are considered too uncertain with regard to geological and grade continuity to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the outcomes of the preliminary economic assessment will be realized.</li> <li>K92ML intends to continue development of Kora North to the south from the existing incline. This will provide diamond drilling sites for infill drilling of the Kora resource. K92ML also intends to continue drilling of the Kora North deposit to upgrade the Inferred Mineral Resources there.</li> </ul>
Geotechnical Conditions	<ul style="list-style-type: none"> <li>Assumptions for stope geotechnical design and for development conditions and support are generally translated from historical experience and assessments of geotechnical conditions at Irumafimpa, as well as mining conditions experienced to-date at Kora North. However, no geotechnical investigations have been undertaken by a geotechnical specialist for Kora North and Kora.</li> <li>Geotechnical data collection should be a key part of the exploration drilling at Kora North and Kora, to inform specialist geotechnical studies to determine: <ul style="list-style-type: none"> <li>Ground conditions and support requirements for development inside and outside of the mineralised veins, including possible requirements for rockbolting and shotcreting equipment</li> <li>Stope stability analysis to confirm stope spans, level interval and stope strike lengths suitable for the next stage of mine design</li> <li>To help understand the potential impact of changes to maximum stope width a sensitivity run was made using MSO with maximum 8m widths for K2 vein. This resulted in a reduction of approximately 7% in tonnes and 4% reduction in AuEq ounces. The impact on the overall tonnes and metal is 5% and 2% respectively.</li> <li>Impact of groundwater conditions on ground stability</li> </ul> </li> <li>Geotechnical investigation of vent rise paths is required to confirm the suitability and costs to develop these key elements of the proposed ventilation network.</li> <li>Investigation of the interaction between K1, KL and K2 lode structures as they converge.</li> </ul>
Hydrogeological and Water Management	<ul style="list-style-type: none"> <li>Mine workings at Kora North are experiencing substantial groundwater water inflows. The water inflows are drained to the 800 Portal by the existing access incline. However, a comprehensive program is required to investigate and manage water inflows and identify water bearing structures, including: <ul style="list-style-type: none"> <li>groundwater investigation by hydrogeological specialist to determine expected and on-going inflows</li> <li>recommendations for measures to mitigate inflows and/or to manage impacts, including direction of inflow water to collection points and piping system to remove the water to the portal</li> </ul> </li> </ul>

Area of Uncertainty and Risk	Discussion and Recommended Further Work
Ventilation and Emergency Egress	<ul style="list-style-type: none"> <li>• The ventilation design presented in this PEA is conceptual in nature and has considerable uncertainty in relation to the feasibility of the layout as well as airflows and pressures. A comprehensive ventilation study is required to address the following:               <ul style="list-style-type: none"> <li>○ Analysis of ventilation options, including VentSim modelling of proposed airways to determine airflows, pressures, air power and fan specifications.</li> <li>○ Investigate the feasibility of raiseboring &gt;500m long holes from surface considering the implications, timing, and costs involved</li> <li>○ Adequacy of proposed interim measures for mining at Kora North.</li> <li>○ Design for emergency egress and refuge systems</li> </ul> </li> </ul>
Materials Handling	<ul style="list-style-type: none"> <li>• The capacity of the access incline and proposed truck haulage is identified as a major risk to achieving the scheduled rate of production. Appropriate assessments and management plans are required to address the following: -               <ul style="list-style-type: none"> <li>○ Improvements required for the main decline hauling surface; in particular, the removal of water and upgraded drainage along the entire length of the decline from the 800 Portal to Kora North access, and placement of adequate road base and sheeting.</li> <li>○ Continual road maintenance.</li> <li>○ Investigation of haulage-way profile to identify tight points, confirm ability for trucks to pass at acceptable speed, design and excavation of additional passing bays along the decline to increase the efficiency of the truck haulage system.</li> <li>○ Assessment of number of additional trucks and truck size required to meet the ramp up targets for late 2019 and onwards. (Provision made for 2x 45t class)</li> </ul> </li> </ul>
Mining Fleet	<ul style="list-style-type: none"> <li>• Additional mining equipment is required to achieve the scheduled mining activity. A careful assessment is required to confirm equipment numbers in addition to the trucking fleet. As a minimum this is likely to require the following:               <ul style="list-style-type: none"> <li>○ Purchase of adequate ground support equipment, including shotcrete jumbo, agi truck and batching plant.</li> <li>○ Additional development jumbos (1 x Twin Booms) required during 2019.</li> <li>○ Additional loaders (1 x 7m<sup>3</sup>) required during 2019</li> <li>○ Bulk Emulsion explosives charging unit(s) required during 2019</li> <li>○ Stope definition drill rig required for grade control and to assist to minimise stope size in the wider mineralised zones</li> </ul> </li> </ul>
Mine Design	<ul style="list-style-type: none"> <li>• Revise stope and development designs as appropriate based on results from geotechnical investigations and analysis, haulage-way assessment, and ventilation assessment.</li> <li>• Revise access design where required due to scheduling and sequencing issues, as K2 may require access through the K1 orebody</li> </ul>
Backfill	<ul style="list-style-type: none"> <li>• Backfill requirements and system have not been assessed in any detail and require appropriate analysis to confirm the feasibility of the proposed approach, including               <ul style="list-style-type: none"> <li>○ Detailed mass balance required</li> <li>○ Investigate the source and cost of any surface waste rock sources</li> <li>○ Investigate possible cement backfill options to reduce dilution and increase recovery</li> </ul> </li> </ul>
Risk Assessment	<ul style="list-style-type: none"> <li>• Formal risk assessment is required for key areas of project uncertainty outlined above, as well as               <ul style="list-style-type: none"> <li>○ Metallurgical performance of Kora North and Kora ore</li> <li>○ Safety and hazard assessment</li> <li>○ Environmental investigations</li> </ul> </li> </ul>

## 17 RECOVERY METHODS

### 17.1 INTRODUCTION

The Kainantu processing plant is located approximately 7km from the opening of the 800 portal which accesses the Irumafimpa Mine. Simple processing technology was used to treat Irumafimpa ore. Following crushing, screening and grinding the sulphide bearing material was separated from the non-mineralized host rock by flotation. The design throughput of the plant was 21 tonnes per hour (170,000 tpa) and approximately 10% of the ore was recovered as a high-grade gold bearing flotation concentrate with the waste material pumped to an engineered tailings storage facility. The gold bearing concentrate was packed in containers and trucked to Lae from where it was shipped to a smelter/refinery for the recovery of the gold.

The plant was designed and constructed in 2005 and treated ore from the Irumafimpa lodes over two separate periods between 2006 and 2008 (HPL and Barrick). Concentrate from the Kainantu Mine was sold to a number of smelters including Japanese smelters. The specification generally fell into that acceptable to copper smelters seeking high gold and high sulphur feedstock, although it did not contain significant copper.

The Process Plant consisted of the following unit processes:

- Ore Receiving and Crushing; to reduce the ROM sizing prior to reclamation for grinding. Screening and recycling was found to be problematical in previous operation and may be removed and replaced with a more suitable crusher operating in open circuit.
- Grinding and Classification; in which the crushed ore is reclaimed and ground to the required size for flotation.
- Differential Flotation; commencing with an Outokumpu Skimair Flash Flotation unit in the classification circuit, combined with Outokumpu tank cells treating grinding product, to recover a gold bearing sulphide concentrate for export.
- Flotation tailings deposition in the tailings storage facility.
- On-site reagent storage and mixing facilities.
- Services for plant air and water distribution.





Figure 95: Photograph of the processing plant (2008)



Figure 96: Photograph of the Crushing Circuit (2012)

## 17.2 CURRENT PLANT CONDITION

The processing plant was placed on care and maintenance when processing ceased in December 2008. Following completion of studies on the redesign of the crushing circuit to handle wet clay rich mill feed Mincore Pty Ltd (“Mincore”) was engaged by K92ML to undertake the plant refurbishment and the installation of a drum scrubber (Mincore, 2015). Refurbishment and repair of the process plant by Mincore commenced in March 2016.

A new main 415V switchboard has been installed as part of the refurbishment of the plant. In addition to general rehabilitation of existing equipment the process plant was enhanced by the addition of a Drum Scrubber which was commissioned in October 2016. The assay laboratory has been recommissioned under the control of Intertek, an internationally recognized assaying company.

## 17.3 PLANT UPGRADE SCOPING STUDY

In August 2016 Mincore completed a scoping study on the requirements for an upgrade of the existing plant to allow treatment of Kora ore at a proposed rate of 400,000 tpa (Mincore, 2016). This was subsequently updated (Mincore 2018) following the in-progress installation of the gravity gold circuit and new lime preparation and dosing facility.

Mincore concluded that:

- There is sufficient crushing and milling power (comminution) to grind 50 tph to  $P_{80}$  of 106  $\mu\text{m}$ . The current two stage crushing circuit is rated at 68tph producing a product size  $P_{80}$  of 10-12mm. However, the secondary crusher has been capacity limited during operations in 2018 and a new larger secondary crusher is proposed, with the existing crusher relegated to standby

service. The new larger secondary crusher will also provide a better crushed ore size distribution to maximise throughput of the downstream milling circuit.

- Additional flotation capacity is required to achieve acceptable residence times for each cell. There is sufficient space to install additional cells if future test work identifies a requirement for longer residence time.
- The existing concentrate thickener and filter is adequate for 400,000tpa of Kora feed averaging 1.7% copper.
- The existing tailings line is adequate but a full pump upgrade will be required.

Mincore suggested the following circuit modifications:

- Jaw crusher liner wear and capacity should be optimized by converting existing pan feeder to grizzly finger feeder to bypass fines from jaw crusher
- The current two stage crushing circuit is rated at 68tph producing a product size  $P_{80}$  of 10-12mm. However, the secondary crusher has been capacity limited during operations in 2018 and a new larger secondary crusher (J35/TC1000 or equivalent) is proposed, with the existing crusher relegated to standby service.
- The existing 150CVX cyclones will be upgrade to a 6 x 250CVX cyclone pack to meet the higher feed rate and recirculating load. Mass balance and cyclone selection is based on a 400ktpa throughput (50tph).
- A gravity concentrator is required in the milling circuit for recovery of any gravity gold.
  - a. The gravity circuit will be installed to capture free gold that is liberated during the grinding process. 100% of the primary mill discharge will be screened at 1 mm via a linear vibrating screen. The screen oversize will report directly back to the ball mill for further grinding. The screen undersize will gravitate to a Falcon centrifugal concentrator. The Falcon concentrator is automated to provide routine flushing of collected concentrate which will gravitate to a goldroom where it undergoes upgrading via a Holman shaking table. The Holman table concentrate will be dried in an electric oven and then smelted in a gas fired barring furnace to produce Dore gold bars. Tails from the Holman table will report back to the primary cyclone feed pump for further processing.
  - b. The Falcon concentrator tail will be pumped to a set of primary hydro cyclones for classification. The fine cyclone overflow will report to a Flotation Surge Tank. The cyclone underflow arrangement will remain as it currently is with a portion of the stream reporting to an existing Flash Flotation cell. The remainder of the cyclone underflow combines with the Flash Flotation tail and gravitates back into the ball mill feed chute for further grinding.
  - c. The addition of the gravity screen will reduce the amount of coarse material the primary cyclones and the flash flotation cell receive. This will reduce wear rates on these units and improve their operating performance. The gravity circuit is expected to recover a high proportion of the free gold which is readily converted into Dore bars and refined for a significantly faster revenue/value realisation. The gravity circuit will reduce the amount of gold reporting to the flotation circuit which in turn should contribute to an overall improvement in recoveries.
  - d. The gravity circuit and gold room are presently being installed.
  - e. Post commissioning of the Gravity Circuit and Cyclone Upgrade, we expect an Au recovery benefit from the gravity circuit of 0.5-1%. However, this may not be added to current recovery as it has not been shown that the same recoveries for Cu and Au



will be achieved at P<sub>80</sub> 106µm at 400,000tpa vs current operation P<sub>80</sub> 75µm 180,000tpa.

- f. Hence recommendation for parallel lab testwork with plant operation at both grind targets before and post commissioning of the gravity circuit.
- Reconfiguration of the current flotation circuit is based on the preliminary test results generated by Barrick Gold which indicated that the Kora ore can produce a single high copper with gold concentrate. These test results were confirmed by operational result achieved during the treatment of the higher Cu-grade K2 ore lode in the first half of 2018. The existing rougher and cleaner circuits are proposed to be used for the new rougher duty since the current cleaner circuit comprises four cells which are exact duplicate of the four cells which make up the current rougher circuit. This will effectively double the capacity and provide satisfactory retention time and requires minimal modification. A new bank of Cleaner and Recleaner cells will need to be added and connected to the existing concentrate thickener and filter.
  - The existing tailings line is adequate but a full pump upgrade will be required.

Mincore consider that test work is warranted to address:

- Further work to establish the most suitable grind size to achieve balanced liberation, recovery, concentrate grade and production rate. This has not been investigated by operations to date and the current grind is P<sub>80</sub> 75 µm v P<sub>80</sub> 106 µm design.
- Investigation of reagent type, addition rate and addition point, including use of new reagents (all at variable pH).
- Investigation of ore blending procedures by use of laboratory flotation tests at various grind sizes to optimise the grinding, flotation and filtering circuits.
- Variability test work to confirm comminution and flotation parameters.
- Barrick 2009 test work suggests that rougher mass pull balancing with cleaner cells will require consideration for high copper feed. Mincore suggest configuration of the 3rd and 4th Rougher Cells as Scavenger cells, and investigating the requirement for regrind of the rougher, and/or rougher scav concentrates. Mincore also suggest investigating opening and closed circuiting the cleaner tails, and undertaking locked cycle test work to confirm performance.
- Investigate reducing reagent consumption, particularly lime, by installation of a tailings thickener. Pumping power costs, water consumption and time would also be saved. These optimisation projects should be investigated during implementation of the expansion projects where the results can be incorporated into the pre-commissioning phase of the expansion.

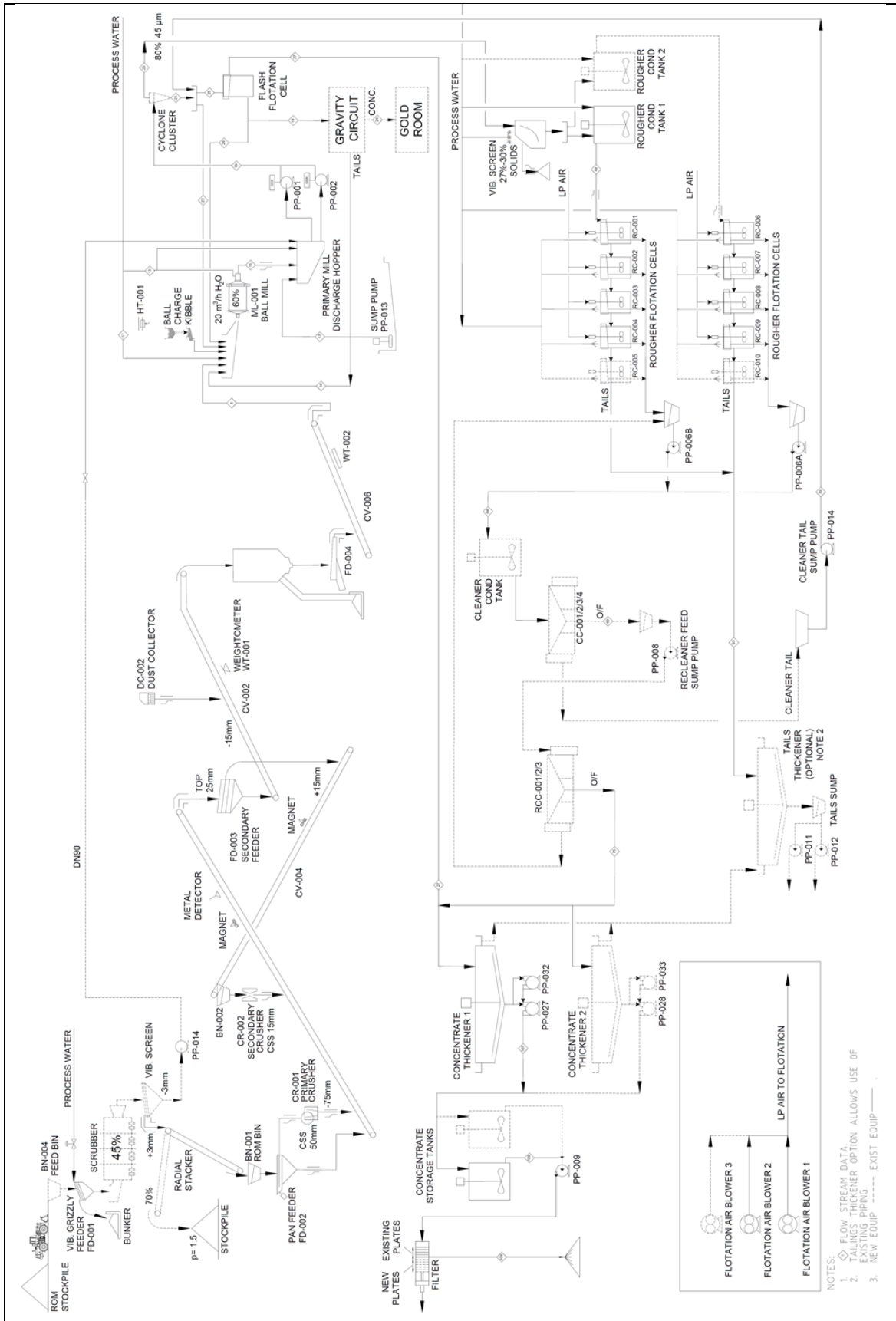


Figure 97: Upgraded Process Plant Flowsheet

Source: Mincore (2018)

## 18 PROJECT INFRASTRUCTURE

The Kainantu mine is located within ML150. The main Kumian camp and processing plant are located within LMP78 which is located within EL693. The property is well supported by regional infrastructure, and contains all the necessary site infrastructure for mining operations. The following infrastructure developments exist on the property.

### 18.1 POWER AND WATER

#### 18.1.1 Power

Power is supplied to the Property from two sources. The primary source is the PNG Power national grid (PPL) from the Ramu sub-station, located 20 km from the processing plant site. The electrical energy for Kainantu operations is delivered by PPL from the nearby Yonki Dam Hydroelectric Plant. Power from the national grid services both the plant area and is available up to the lower portal of the underground mine. Power reticulation to site is 22kV whilst the Underground Mine is serviced by a 11kV line. The secondary back-up power is supplied by 2 x 1250 kVa generators at the processing plant and a 1250 kVa generator at the 800 Portal. Upgrades to the Processing Plant and Underground mine back-up generators are planned and included in the expansion CAPEX to ensure sufficient stand-by diesel generated power to run the mine and treatment facility.

#### 18.1.2 Water

Water for potable use is drawn from two bore wells supplemented by water harvested from building roofs. The water is channelled into tuffa tanks, chlorinated and filtered for use. Raw water for use in the process plant is provided primarily from diverted discharge from the underground mine, backed up by additional capacity from the TSF return water.

### 18.2 MINE

Underground mining at Kainantu operated from 2004 to December 2008. The operation was under Care and Maintenance until April 2016 when rehabilitation and refurbishment started to re-establish underground mining infrastructure. The following mining infrastructure is in place as summarised below:

#### 18.2.1 800 Portal and Workshop

The 800 Portal area encompasses infrastructure for utilisation and security of the underground mine. Key elements of the infrastructure are:

- Power generation platform comprising a raised concrete platform which houses a 1250kVA diesel generator and a transformer to provide sufficient back-up power to the underground operations during PPL power outages.
- Workshop and secure store rooms consisting of shipping containers and igloo roof shelters. The facility also provides secure storage for cap lamp recharging stations, re-breather units, small equipment and general consumables. A covered work deck provides shelter from weather during maintenance and servicing of underground plant. The underground tag-board and mine entry log is also housed here.
- Reinforced underground portal.
- Wash-down bay, ablution hut, laydown area.
- Ore Stockpile & Waste Dump.

The 800 portal facility is located less than three hundred meters from a local settlement named Kokomo, comprised of Pomasi residents and Bilimoian settlers.



Figure 98: Aerial view of 800 Portal Infrastructure (June 2018)

### 18.2.2 Underground Mine

The Underground Mine comprises:

- 800 Portal, Upper 1300 Portal, 1300 Puma Exhaust Portal.
- Over 6 km incline to working levels and the exhaust portal. The incline is 5m x 5m, from the 840 portal to the switchback at the Kora turnoff (2.5km), where breakthrough of the decline from the old Irumafimpa working levels occurred. The upper section of the incline from the switchback is 4m x 4m towards Irumafimpa, whilst the Kora North section continues as a 5m x 5m incline.
- Kora North workings comprising the 1185mRL level, 1170mRL cross cut to K2 vein, 1205mRL level (just started). The working levels are constructed at 4m x 4.6m.
- Irumafimpa old workings between the 1205mRL and the 1425mRL developed with footwall drives, ore development drives, ancillary crosscuts and stoping development. The working levels are constructed at 3m x 3.5m.
- Two ore passes servicing the Irumafimpa section of the mine.
- A 315mm dewatering pipeline is currently under construction to handle drainage water from Kora North to the 800 Portal.
- A 415V compressor is installed close to the Kora North workings and a receiver will be installed.
- 4 x Refuge Chambers service the underground workings and another two units will be installed early in 2019.

### 18.2.3 Upper 1300 Portal

Most of the infrastructure at the Upper 1300 Portal, which had been used during mine operations, has been removed from the site. The site is currently not accessible from the underground mine due to a collapse along the internal access route.

### 18.2.4 Puma Exhaust Portal

The Puma Exhaust Portal was refurbished in 2016 to provide a second escape way and host the 2 x 55kW main extraction fans that ventilate the mine. Upgrades are planned for the ventilation and is described in Section 16.

### 18.2.5 1400 Level Camp

Following closure of the underground mine in 2009, the majority of the 250 man 1400 Level Camp was decommissioned and removed from the site. One building remains which facilitates security services for the upper mine openings and prevention of illegal mining.

## 18.3 PROCESSING PLANT

The Kainantu Processing Plant and Run-Of-Mine (ROM) stockpile are located approximately 6 km from the opening of the 800 portal. The plant was on care and maintenance from December 2008 until April 2016 when refurbishment commenced. Commercial production was declared in February 2018.

Simple processing technology is used. Following crushing, screening and grinding the sulphide bearing material is separated from non-mineralized host rock by flotation and a gold-rich flotation concentrate sold. Further details of the processing plant are in Section 13 Mineral Processing and Metallurgical Testing.



Figure 99. Oblique view of Process Plant and office infrastructure area (Nov 2017)

## 18.4 SURFACE INFRASTRUCTURE

Additional infrastructure at the property includes an accommodation camp at Kumian, administration offices, a warehouse with laydown facilities, equipment workshops, a core shed with storage containers, an assay laboratory and a surface explosives magazine.

### 18.4.1 Accommodation Camp

Accommodation at Kumian Camp (Figure 100) consists of a series of single person/shared ablution type facilities, as well as fully ensuited rooms for senior personnel. The current optimum capacity of the camp is 439 personnel after additional accommodation units were installed and constructed in 2018. Further expansion is planned for 2019.



Figure 100 Aerial and Ground view of Kumian Accommodation Camp (June 2018)

Mess/Catering Facilities currently provides an average of 525 meals per day to K92 Mining staff and on site Subcontractors. A National Catering Company, NCS who has a signed JV Landowner agreement with our local community, provides these meals in accordance with health codes and practices. The Kitchen/Mess building and infrastructure is maintained by K92 Mining's Site Services Section.

The camp also contains a health/first aid clinic for the benefit of K92ML's employees. The clinic is sufficiently furnished to stabilise injured personnel prior to transport. It contains a paramedic's office, treatment and emergency treatment room, bathroom, dispensary, records storage and a waiting area. The clinic is supported by a mobile ambulance for paramedics and clinic staff.



Figure 101. Aerial view of Process Plant, Tailings Storage Facility (June 2018)



**Figure 102. Aerial view of Surface Explosives Magazine (June 2018)**

## **19 MARKET STUDIES AND CONTRACTS**

K92 signed an offtake agreement in October 2017 with Trafigura Pte Ltd covering the first nine years (with a minimum of 170,000 dry tonnes to be delivered) of concentrate production from the Kora deposit. The terms provide for payment of gold, silver and copper contained in the concentrate.

## **20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

### **20.1 ENVIRONMENTAL LIABILITIES AND MINE CLOSURE**

To the extent known by Nolidan, there are no known environmental liabilities on the property which were not fully disclosed in the Mine Closure Plan by Barrick dated November 2010, a summary of which is given below:

The estimated closure costs are reported in two ways, namely as the Asset Retirement Obligation (ARO) and Life-of-Mine (LOM) costs. The ARO reflects expected costs as of the end of a calendar year (the ARO Year) as defined by the Financial Standards Board (FASB) Statement 143. Both the ARO and LOM costs calculated are undiscounted and based on third party cost rates.

The mine closure costs have been calculated in accordance with the Barrick Mine Closure Planning and Cost Estimation Guideline which outlines the approach to estimating costs associated with mine site reclamation, closure and decommissioning. The Barrick Reclamation Cost Estimator (BRCE) model has been used to determine the 2010 costs.

The un-discounted ARO closure cost as at 31 December 2009 was determined as \$5.94m. This estimate has been reviewed based on operational changes and closure review. The un-discounted ARO closure cost estimate for 31 December 2010 is \$ 6.86m.

The un-discounted LOM closure cost as at 31 December 2009 was determined as \$5.97m. This estimate has been reviewed based on operational changes and the closure review. The LOM closure cost estimate for 31 December 2010 is \$6.89m.

It should be noted that in 2010 the 'Direct Total' cost includes a 16% contractor profit and administration fee within the labour rate, whereas in previous years a 20% P&G fees was applied to the overall total cost.

**Table 49 Mine Closure Costs - Barrick 2010**

KAINANTU	Description	2009 ARO (from BRCE)	2010 ARO (from BRCE)
<b>Waste rock Dumps</b>	Waste Rock Dumps	\$32,186	\$37,179
<b>Tailings impoundments</b>	Tailings Impoundments	\$236,238	\$263,413
<b>Pits</b>	Pits	\$0	\$0
<b>Roads</b>	Roads	\$2,494	\$0
<b>Processing areas</b>	Heap Leach Facilities	\$0	\$2,885
	Landfills	\$3,645	\$4,107
	Buildings	\$194,330	\$306,034
	Other Demo & Equip Removal	\$680,000	\$708,800
	Yards	\$29,436	\$33,577
	Process Ponds	\$6,089	\$6,285
<b>Backfilling, Adits, Shafts</b>	General rock Hauling/backfilling	\$0	\$0
	Adits & Declines	\$38,651	\$41,166
	Shafts	\$878	\$1,015
<b>Drainage and Sediment Control</b>	Drainage & Sediment Control	\$8,075	\$12,097
<b>Wells and Bores</b>	Wells & Bores	\$3,816	\$4,537
<b>Exploration rehabilitation</b>	Exploration Holes	\$0	\$0
	Exploration Roads & Pads	\$0	\$0
	Trenches	\$0	\$0
<b>Waste, Decontamination and Effluent Disposal</b>	Waste Disposal	\$48,309	\$50,643
	Solution/water pumping	\$0	\$0
	Solution/water Evaporation	\$0	\$0
	Solution/water Management	\$0	\$0
	Decontamination	\$0	\$0
<b>Other Costs including Closure Management, Admin etc</b>	Other user costs	\$1,891,640	\$2,081,982
	Miscellaneous costs	\$849,534	\$942,814
	Closure Plan Management	\$20,000	\$120,750
	Construction Management	\$256,656	\$300,558
	Monitoring & Maintenance	\$220,993	\$458,207
	General & Administration	\$0	\$1,060,000
	Human Resources	\$430,000	\$424,000
	Direct Totals	\$4,952,970	\$6,860,049
	Contractor P&G (including profit)	\$990,594	\$0
	<b>Total</b>	<b>\$5,943,563</b>	<b>\$6,860,049</b>

## 20.2 TAILINGS STORAGE FACILITY

A tailing storage facility (TSF) is located downstream of the process plant adjacent to the Kumian Creek, which flows into the Baupa River. Tailings are reject from the flotation circuit.

The tailings storage facility is classified as a high hazard dam and contains tailings material. Runoff from within the dam is captured in catchment ponds behind the dam wall and is intermittently decanted into the tailings treatment ponds prior to discharge to Kumian Creek. The tailings material remains saturated as meteoric waters have been allowed to pond in the TSF. Water quality of the discharge from the ponds indicates that the water quality does not pose a risk to the receiving environment.

### 20.2.1 Tailings Disposal

It is reported that nominally 285,000 tonnes of tailings were produced by the plant during the years of production. The waste stream generated from the processing of ore comprises of sand tailings from the flotation circuit. The flotation tailings were relatively inert, composed primarily of quartz and waste rock sand and only very minor sulphur bearing minerals. However, inspections of the tailings material indicate it does possess acid producing potential. A water cover is maintained over the material within the TSF which has prevented oxidation. No detailed studies have been completed on tails characterisation.

The only water discharge from the plant was contained in the flotation tailings, and pumped to the tailings dam. Any over-accumulation of decant water in the TSF was discharged to the overflow wetland system. Overflow and decant from the TSF flows through a wetland system prior to discharge



to Kumian Creek. No AMD is anticipated as TSF water is currently being used as process water and the tailings has an elevated pH, due to the addition of lime, to allow flotation to occur at pH 10+. Discharged excess TSF water has a pH >7 which is confirmed by water monitoring down-stream from the TSF.

### 20.2.2 Future Tailings Capacity

It is reported that approximately 307,000t of ore was fed to the plant over the life of the mine, with 93% reporting to the tailings for 285,000t.

Assuming a total capacity of 545,000t, and utilisation of 285,000t to date, the remaining capacity of the TSF would be around 238,000t dry or 170,000m<sup>3</sup>. In 2013 Golders estimated nominally 280,000m<sup>3</sup> capacity remaining based on the observation of 2m remaining freeboard on the TSF wall.

Since restarting operations approximately 125,000t additional tailings has been deposited to date.

The TSF will be expanded to treat the 2.57 million tonnes of Kora ore following a detailed survey reconciliation.

Lifting the main dam wall crest to 520RL will provide storage capacity sufficient for 1.82 million tonnes and it is expected that the final RL will be 527m.

These future storage requirements will be investigated as a further study during mining operations. It is likely that a wall lift will be required in 2020, based on current TSF capacity.

## 20.3 REQUIRED PERMITS

The following permits are required for mining operations:

- License to keep, store or possess explosives;
  - The mine is currently licensed to keep, store and possess explosives
- Permit for Persons using Explosives;
  - A process has been followed whereby Shotfirers have been trained and certificated through the Mine Regulatory Authority the Explosives Inspectorate falling under the Department of Labour and Industrial Relations
- Conveyance of Explosives & Dangerous Goods;
  - Explosives transport from Lae to the mine site are outsourced to a transport contractor (Mapai Transport) who has the necessary permits and approvals to transport dangerous goods. Kainantu Gold Mine also has the required permit to transport explosives on the mine site between the Surface Explosives Magazine and the underground workings.
- Approval to recruit non-citizens;
  - K92 Mining Limited has the necessary approvals to employ non-citizens through the PNG Department of Immigration
- Gold Export License;
  - K92 Mining Limited has applied for and is in possession of the required Gold Export License
- Exchange Control for Establishing Foreign Bank Accounts;
  - Approved by the Bank of PNG.
- Tax Clearance Certificates for Transfer of Funds out of PNG;
  - K92ML will apply for this clearance from the Commissioner of Taxation as and when needed.

- Liquor License;
  - A management decision was made that the mine accommodation camp would remain a “Dry Camp” and a liquor license is therefore not required.
- Certificate to Conduct Business as a Foreign Enterprise;
  - Not required as K92ML will be operating through a PNG company.
- Registration of an Overseas Company under the Companies Act;
  - Not required as K92ML will be operating through a PNG company.
- Data Transmission VSAT;
  - Not required at this time.
- Radio Licenses;
  - Licenses have been issued to the mine site by NICTA (National Information and Communications Technology Authority).

#### **20.4 ENVIRONMENTAL PERMITS**

Environmental Permits for the Property are for Water Extraction and Waste Discharge. Environmental permits for the site are current until 31<sup>st</sup> December 2053. The various iterations of the Permits are described here:

- 14/06/2002; Grant of permits - Water Extraction WE-L3(9), Waste Discharge WD-L3(32)
- 30/08/2004; Amendment for Water Extraction WE-L3(13), Waste Discharge WD-L3(34).
- 12/09/2005; Amendment for Water Extraction WE-L3(13), Waste Discharge WD-L3(34).
- 11/12/2007; Transfer for Water Extraction WE-L3(13), Waste Discharge WD-L3(34). Transferred from Highlands Kainantu Ltd to Barrick Kainantu Ltd.

#### **20.5 MEMORANDUM OF AGREEMENT (MOA)**

The original tenement holder, Highlands Pacific Limited (“HPL”) signed a Memorandum of Agreement (MOA) with the State, the Eastern Highlands Province (“EHP”) Government, the Kainantu LLG, the Bilimoian Landowners Association (“BLA”), and Associated Landowners on 11<sup>th</sup> November 2003. This MOA provides for the allocation and use of the royalties derived from the project for the benefit of all stakeholders.

The agreement was to be reviewed five years after consummation, i.e. in 2008, and bi-annually thereafter. There have been no reviews of the MOA due initially to delays in completion of an investigation into Landholding at the Project by the Land Titles Commission (“LTC”), and subsequently due to further delays from appeals to the determination by the LTC in 2009.

The MOA would normally have expired with ML150 on 13<sup>th</sup> June 2014. However, in line with the continuance of the mining lease under Section 112 of the Mining Act 1992, the MOA will continue in force unless the Minister for Mining decides not to extend the term of the mining lease.

The parties to the MOA comprising K92ML, the MRA, local Provincial and National Government and primary Landowners for the Project commenced a review process of the MOA and Compensation Agreement. It is anticipated that this process will be completed in 2019 and new agreements will be signed by the parties. In the interim, K92ML will comply with the tenets of the MOA and has resurrected aspects of the MOA which have been closed while the project has been in care and maintenance.

##### **20.5.1 Memorandum of Understanding (MOU)**

HPL signed a Memorandum of Understanding (MOU) on 21<sup>st</sup> August 2003 with the Bilimoian Landowners Association (BLA). The MOU was presented to the MRA as an attachment to the MOA.

The document provides the framework and understanding for the Landowners to receive a 5% interest in the Project.

The agreement to provide to the Landowners a 5% carried equity in the Project was established by the Chief Warden Mr Timothy Kota through mediation after a breakdown in negotiations between the parties over the draft Compensation Agreement.

The MOU provides for Landowners to be issued a 5% carried equity in the Project through the issuing of shares in Highlands Kainantu Limited (“HKL”). The 5% interest was not issued due to uncertainty in relation to the parties who constitute Landowners which is being determined through the Land Title Commission (“LTC”) Appeals Review. The obligation in relation to the MOU now resides with K92 Holdings to issue a 5% carried equity interest in the Project once the LTC has issued its determination.

The MOU also provides that 65% of the dividends from the 5% equity will be used to repay capital costs to the parent company and 35% will be paid to the Landholders until the capital has been fully repaid.

This MOU has no legal or binding effect, however K92PNG agreed with Barrick Niugini under the K92ML Purchase Agreement to pursue in good faith negotiations to implement the terms of the MOU and convey a 5% equity interest in the Project to the BLA.

#### **20.5.2 Local Business Development Policy (LBDP)**

This document, dated August 2003, was prepared as Annexure A to the MOA. The policy sets out the principles by which direct assistance will be given to the Landowners and local Community. K92ML will continue to operate under the tenets of this Policy.

#### **20.5.3 Community Sustainable Development Plan (CSDP)**

This document, dated August 2003, was presented to the MRA as Annexure B to the MOA. The Plan provides for coordinated management of the benefit streams arising from the mining operation, to ensure that community development was delivered in a sustainable manner.

Key obligations to the Developer under the Plan are:

- Royalties. Distribution of royalties to be to the Public Infrastructure Trust Fund for management under the CSDP.
- Community Facilities Grant (CFG). K600,000 allocated by HPL for high priority community development projects.
- Structural Support Grant (SSG). A grant provided between the commencement of commercial production and commencement of payment of company tax.
- Tax Credit Scheme (TCS). The TCS of applicable tax credits to fund local infrastructure projects.

### **20.6 COMPENSATION AGREEMENT**

HPL signed a Lands and Environment Compensation Agreement with identified impact communities in June 2003. The agreement was to be reviewed three years from commencing commercial production, and every three years thereafter. There have been no reviews of the agreement due initially to delays in completion of an investigation into Landholding at the Project by the Land Titles Commission (LTC), and subsequently due to further delays from appeals to the determination by the LTC in 2009.

K92ML has discussed and agreed with the MRA that the review of the MOA and Compensation Agreement will be delayed until the LTC has finalised review of all appellants to the 2009 LTC determination, and the primary Landholders for the Project have been declared. Whilst there are still 26 appeals of the LTC Declaration of 2009 to be dealt with, all stakeholders agreed to commence with the review of the 2003 MOA. This process started on the 24th August 2018 and the next MOA review meeting is scheduled for January 2019. These meetings could continue for the next year until final sign

off by all stakeholders. The Compensation Agreement review will commence on completion of the MOA review and it will form an annexure of the MOA.

These forums will involve the signatories to the Compensation Agreement (which includes all beneficiaries of the 2009 LTC determination), the LTC, the Provincial Administration, and the Development Coordination Division arm of the MRA.

## **20.7 OTHER SIGNIFICANT FACTORS AND RISKS**

Barrick conducted an extensive investigation into the matter of the all outstanding sales royalties and compensations payable by K92ML since the commencement of the project. Some of these monies remain outstanding due to internal disputes over land ownership, the resolution of which is beyond K92ML's control. Barrick, in conjunction with the K92ML Purchase Agreement, set up bank accounts under K92ML to hold these monies in trust. Considerable effort was expended to ensure that Barrick had determined the entire value of the amounts outstanding. Where there are discrepancies, Barrick has erred on the side of caution with respect to determining amounts payable. However, any discrepancies discovered after closing of the K92ML Purchase Agreement are the responsibility of the new management. Barrick considers that once the bank accounts are in place and the populated with the relevant monies, they have concluded their obligation to fully investigate and hand over the outstanding monies for the new administration's future management and dispersal.

The Company has obligations to compensate landowners annually who are affected by the operations of the Kainantu mine. These compensations are governed by the Papua New Guinean Mining Act 1992 and land and environment compensation agreement ("CA") for ML 150 that the prior owner of the Kainantu mine entered into with the BILA and certain landowners / clans listed in the agreement. The actual recipients of the compensation determined under the CA and landowners' share of sales royalty could not be paid as required under the CA until the legitimate landowners were identified by the Papua New Guinean Land Titles Commission ("LTC") and so compensation payments have been accrued but not paid.

The estimation of landowners' compensation in Kainantu requires significant judgmental assumptions regarding compensation rates and land area affected by the mining activities. The principal factors that cause expected cash flows to change are: changes in the land area lost due to mining or other activities; changes in compensation rates; future claims for additional compensations and in particular individual one off compensations that are found to be legitimate and requiring additional payments.

The amount of landowners' compensation provision for Kainantu mine as of December 31, 2017 was \$621,537 (1.97 million Papua New Guinea Kina), which reflects expected cost.

Access to areas with existing surface miners is challenging, although well under control at the present time. K92ML maintains a security presence at the main artisanal mining areas (Kora and Irumafimpa). The Security teams are supervised by K92ML personnel, but are comprised of local Bilimoian security contractors who source their personnel from the nearby Bilimoian villages. There have been no significant artisanal mining issues since this approach was employed (Barrick, 2014).

Land Ownership and access issues result from inter-clan fighting. This results in delays in assessment and advancement of exploration properties. The risk to property is minimal and is mitigated by ongoing and proactive Community Relations ("CR") engagement.

Strong community relations are imperative to exploring in PNG with community agreement required before any exploration activities can take place. The Kainantu area has been beset with CR issues since modern exploration commenced, resulting in many prospective areas not being explored and very limited drilling. The K92ML CR team have worked to gain the trust of the local landowners and this has resulted in access being granted in many areas which have not previously undergone detailed exploration.

As part of Barrick's commitment to deal equitably with local communities, Community Engagement Agreements between Barrick and local landowners were put in place prior to any exploration activities commencing. These set out what the community could expect from Barrick, including incentive payments, rental payments and dispute resolution procedures. The Exploration CR team includes up to four community relations officers and six village liaison officers supported by a community relations coordinator and Community Relations Manager.

Community relations personnel deal with all access negotiations prior to any exploration activities being undertaken, calculate, resolve and payout compensation payments and attend all Warden's Hearings. (Barrick 2014)

K92ML has undertaken to continue this pro-active CR engagement with affected landowners.

The Bilimoia Interim Landowners Association ("BILA") was established in 2017 with the assistance of the MRA to bring together different Bilimoian groups into one association. The association is termed interim as finalization of who constitutes Bilimoian Landowners awaits the outcome of an appeal of the Land Titles Commission determination of 2009. The Chairman was elected in April 2017 and the first meeting to deal with internal issues for BILA and its stakeholders occurred on Sunday 13th August. Subsequent to this a meeting was arranged by the MRA between PNG National, Provincial and Local Government agencies, BILA and the Company. On the morning of Thursday 24th August, prior to the meeting commencing on site, a group of landowners represented by BILA entered the mine via the 800 mine portal. The company removed its personnel from the area in an attempt to diffuse the situation without incident. However, during their presence, the group caused major damage to some mining equipment, underground fixed plant and 800 Portal infrastructure. No other areas of the mine nor any areas around the processing facilities were impacted by the group and fortunately the damage, while not insignificant, was minor in relation to the project as a whole. Following the signing of a resolution between the Bilimoia Interim Landowner Association, the Mineral Resources Authority and the Company K92ML recommenced underground operations at the mine in October 2017. The signing of the resolution with the Bilimoia Interim Landowner Association is believed to address the underlying issues with the landowners. Further meetings took place during 2017 & 2018 to set-up the MOA and work is ongoing to expand the business opportunities for the Landowner groups.

As to political risk, Nolidan notes that on the Fraser Institute's Investment Attractiveness Index for 2014 Papua New Guinea ranks higher than Indonesia and the Philippines but below Australia and New Zealand (Jackson and Green, 2015). Its score was 48.5 compared with 56.2 in 2013.

## **21 CAPITAL AND OPERATING COSTS**

### **21.1 KORA NORTH PHASE**

#### **21.1.1 Kora North Phase Capital Expenditure Equipment and Facilities**

Conceptual capital expenditure allowances were prepared by AMDAD and K92ML. In addition to mining equipment and infrastructure an estimate is included for expansion of the existing process plant to 400,000 tpa capacity. This estimate was provided to K92ML by Mincore in its updated report in 2018. Please refer to the table below;

**Table 50: Kora North Phase Capital Expenditure – Equipment and Facilities**

Item	Cost \$M (USD)	Source
Ventilation fan	0.5	AMDAD allowance - Stage 1: 2 x Add fans
UG trucks	3.0	3 x MT42 or similar (Nov 2018 budget quote)
2 boom Jumbo	1.4	1 x DD421 or similar (Nov 2018 budget quote)
LHD	1.16	1 x Cat1700 (Nov 2018 budget quote)
Tele-remote implementation	0.35	Budget estimate (utilising R1700 Loader)
Compressor units	0.2	To be used with Stope Mates
Services vehicle	0.4	Infomine, base chassis & service module + \$100k for other etc (AMDAD allowance)
Shotcrete jumbo	0.1	Jaycon Midjet (Refurbed unit from EMS)
Batchplant	1.0	AMDAD allowance
Grader	0.4	AARD or similar (Nov 2018 budget quote)
Camp Expansion	0.65	K92ML allowance
Mill Upgrade	3.7	K92ML update estimate from Mincore
Genset Upgrade	0.3	
Stope definition Drill	0.3	AMDAD allowance, stope definition and grade control
<b>Total</b>	<b>13.6</b>	

Note, K92ML advised that an additional \$8.4M is required as sustaining capital during 2019.

### 21.1.2 Kora North phase Capitalised Development costs

All waste development (lateral and vertical) is treated as a capital cost. Below is a summary of lengths and costs for capitalised development estimated by AMDAD.

**Table 51: Kora North Phase Capital Expenditure - Development**

Item	Length (m)	Cost (USD) \$M
Decline Development	1,825	8.7
Lateral Waste Development	13,463	47.1
Vertical Waste Development	555	3.5
<b>Total Capital Development</b>	<b>15,843</b>	<b>59.3</b>

Note, an additional 100m is included with decline development for passing bays in the existing Irumafimpa decline and 100m/yr is added to vertical development to allow for ore passes and escape ways.

### 21.1.3 Kora North Phase Mobile Fleet

K92ML currently has a fleet of mobile equipment mining the Kora North deposit. The table below summarises the additional mobile fleet required for the remaining five years of the Kora North Phase LOM schedule.

**Table 52: Kora North Phase Capital Expenditure – Mobile Plant**

Mobile Fleet	Number	Note
Development Jumbo	1	Twin-boom jumbo suitable for rockbolting and face boring.
LHD Unit	1	7m <sup>3</sup> LHD unit.
Haul Truck	3	A new fleet of 45t units is required for the ramp up in development and production from mid 2019 onwards
Shotcrete Jumbo	1	Compact mobile shotcrete rig (e.g. Jaco Maxijet)
Services vehicle	1	Services truck, vent, dewatering, pumping & general use
Grader	1	
Stope definition Drill	1	Stope definition

#### 21.1.4 Kora North Phase operating costs

Total operating cost estimated for the Kora North plan is \$279 million.

This cost is derived from the estimated development and production quantities from AMDAD's schedule applied to the unit costs provided by or confirmed by K92ML. An additional \$10/t for cemented rock fill and ground control in longhole stoping and \$4/t for UG Services for all mining is applied to cover ventilation, dewatering and road maintenance costs.

A breakdown of this cost is listed in the table below.

**Table 53: Operating costs for the Kora North Phase Life of Mine Plan**

Kora North Opex \$M	Year	2018Q4	2019	2020	2021	2022	2023
Mining - CF	49.4	1.6	7.7	12.3	11.3	10.3	6.2
Mining - longhole stoping	100.2	1.3	10.3	19.5	22.7	23.7	22.7
Processing and site costs	129.5	4.9	21.1	26.2	27.1	27.1	23.1
<b>Total</b>	<b>279.0</b>	<b>7.8</b>	<b>39.1</b>	<b>57.9</b>	<b>61.1</b>	<b>61.1</b>	<b>52.0</b>

For Q4 2018 and ramp up period during 2019 higher operating costs are used in the evaluation model, which are based on the historic costs during 2018 and the K92ML 2019 budget. Unit costs reduce during 2020 as the mill feed increases to 400ktpa.

## 21.2 KORA PHASE

### 21.2.1 Kora Phase Capital Expenditure Equipment and Facilities

Conceptual capital expenditure allowances in the cashflow model prepared by AMDAD are summarised in the table below.

**Table 54: Kora Phase Capital Expenditure – Equipment and Facilities**

Item	Cost \$M (USD)	Source
Ventilation fans	1.0	Infomine & AMDAD allowance
Vent civils, infra	1.0	AMDAD allowance
Electrical Infra	2.0	AMDAD allowance
Portal works	1.0	AMDAD allowance
Kora Mine facilities	2.5	Infomine and AMDAD allowance. Includes sustaining capital for LOM
Kora Vent establishment	5.0	AMDAD allowance. Provision for Upper ventilation drive & stripping of Irumafimpa drive. Construction of any additional underground facilities.
UG trucks	4.1	K92ML estimate
2 boom Jumbo	3.7	K92ML estimate
LHDs	2.3	K92ML estimate
Prod. Rig	1.0	K92ML estimate
Shotcrete Jumbo	0.3	K92ML estimate
Services vehicle	0.9	K92ML estimate
Low Profile Grader	0.7	K92ML estimate
Total	25.5	

Kora Mine Facilities consist of any infrastructure development, and infrastructure items to be constructed underground at Kora. These include:

- Offices and pre-start facilities
- Workshop, refuelling and equipment parking bays
- Magazine
- Ladder ways

### 21.2.2 Kora Phase Capitalised Development costs

All waste development (lateral and vertical), except crosscuts from footwall drives to the orebody drives, is treated as a capital cost. The table below is a summary of quantities and costs for capitalised development estimated by AMDAD.



**Table 55: Kora Phase Capital Expenditure - Development**

Item	Quantity (m)	Cost (USD) \$M
Decline Development	4,841	21.8
Lateral Waste Development	16,007	56.0
Vertical Waste Development	2,078	9.5
<b>Total Capital Development</b>	<b>22,926</b>	<b>87.3</b>

### 21.2.3 Kora Phase Mobile Fleet

The table below summarises the mobile fleet requirements for the Kora Phase LOM schedule.

**Table 56: Kora Phase Capital Expenditure – Mobile Plant**

Mobile Fleet	Number	Note
Development Jumbo	3	Twin-boom jumbo suitable for rockbolting and face boring. These will be replacing the rigs used at Kora North
LHD Unit	2	~7m <sup>3</sup> LHD unit.
Haul Truck	3	~45t ADT.
Production Drill Rig	1	Suitable for 64-102mm upholes.
Shotcrete Rig	1	Compact mobile shotcrete rig (e.g. Jacon Maxijet)
Cablebolt Jumbo	1	Single boom
Integrated Tool carrier	1	FEL IT unit or similar
Telehandler/Manitou	1	Services truck, vent, dewatering, pumping & general use
Low Profile Grader	1	UG grader

### 21.2.4 Kora Phase operating costs

Total operating cost estimated for Kora is \$490.6M. This cost is derived from the estimated development and production quantities from AMDAD's schedule applied to the unit costs provided by or confirmed by K92ML. An additional \$10/t for cemented rock fill and ground control and \$4/t for UG Services is applied to cover ventilation, dewatering and road maintenance costs.

This cost is listed in the table below

**Table 57: Operating costs for the Kora Mine Plan**

Kora Opex \$M	Year	2023	2024	2025	2026	2027	2028	2029	2030	2031
Mining - longhole stoping	272.9	5.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	29.7
Processing and site costs	217.7	4.0	27.1	27.1	27.1	27.1	27.1	27.1	27.1	23.7
<b>Total</b>	<b>490.6</b>	<b>9.0</b>	<b>61.2</b>	<b>61.2</b>	<b>61.2</b>	<b>61.2</b>	<b>61.2</b>	<b>61.2</b>	<b>61.2</b>	<b>53.4</b>

## 22 ECONOMIC ANALYSIS

In addition to preparation of schedules with estimates of tonnes and grades and development metres (Section 16.2), AMDAD also prepared a conceptual cashflow and discounted cashflow (DCF) derived from these quantities, with allowances for mine capital expenditure.

When reviewing these figures, it should be noted that: -

The preliminary economic assessment is preliminary in nature. It includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessments will be realized.

- Non-mining economic and processing parameters assumed and referred to in the study are conceptual. They were applied for the purpose of identifying the part of the Mineral Resource that notionally may be economic, in order to prepare conceptual extraction designs.
- Schedules are based on conceptual development and stoping quantities estimated at a low level of confidence, and not on working designs.
- Where cashflow schedules are provided based on these assumed parameters they should be treated with caution, and they should not be interpreted as a measure of the value of the deposit.
- Operating cost estimates by K92ML for the treatment of the Kora ore were based on current operating costs for the K92ML concentrator, reagent consumptions determined by historical production, and calculated power consumption of new and modified equipment.
- A 10% sustaining capital allowance was applied over the LOM for the infrastructure and mobile equipment.
- A 2.5% sustaining capital allowance was applied to the LOM to the capital development cost. This will cover the cost of operational capital that may be required.
- Current Metal Prices used were: Gold – US\$1,300/oz; Silver – US\$15/oz; Copper – US\$2.90/lb.
- Gold recovery is set at 94% and Copper recovery is 92%
- The estimates of tonnes and grade reported and scheduled do not constitute a Mineral Reserve because: -
  - a) The Mineral Resource estimate from which the tonnes and grade are derived are predominantly Inferred Resources. Inferred Resources are at too low a level of confidence to allow conversion to Mineral Reserves.
  - b) There is insufficient geotechnical information to be confident in development and extraction design parameters and costs and the mine plan can only be considered conceptual.
  - c) Limited metallurgical test work has been completed for the copper-gold mineralization and further work will be required to confirm the processing cost and recovery assumptions. However, all material treated in 2018 has been from the Kora North mining area which to date support the assumptions made.
- Any reference to “ore” in the Scoping Study is simply a reference to that part of the Mineral Resource, with appropriate adjustment for dilution and loss, that would be intended as mill feed, rather than waste, and which would be a Mineral Reserve if all requirements of CIM Definition Standards for Mineral Resources and Mineral Reserves were met.

## 22.1 KORA NORTH PHASE MINE PLAN

Key estimates from the Kora North Mine Plan prepared by AMDAD are:

- Planned treatment of 1.71Mt tonnes at 13 g/t Au, 12 g/t Ag, 0.63%Cu over the 5.25 LOM plan.
- This would generate an estimated positive cash flow of US\$499 million using current metal prices. This cashflow includes conceptual allowances for capital.
- Production of an estimated average of 135,000 Au ozs and 2,100t Cu per annum over a 5-year period from Year 2019 through to Year 2023.
- An estimated Pre-tax NPV of US\$402 million; using current metal prices, exchange rate and a 5% discount rate;
- Capital Expansion Cost is estimated to be US\$13.6 million. Development Capital Cost is estimated to be a further US\$59.3 million and Sustaining capital is US\$11.2 million over the LOM.
- Operating Cost per tonne is estimated to be US\$163/tonne for the LOM

Annual cashflows are presented below for the Kora North LOM plan;

**Table 58: Kora North Phase Simplistic Cashflow Model for LOM Plan**

Kora North		Year	2018Q4	2019	2020	2021	2022	2023
Mill Feed		Total						
Prod. Dev. Ore	kt	1,712	26	183	363	400	400	340
	Au g/t	12.45	14.54	13.38	12.38	11.18	11.27	14.76
	Ag g/t	11.65	10.40	12.32	12.31	12.52	11.60	9.73
	Cu %	0.63	0.55	0.70	0.70	0.70	0.59	0.48
	Au kOz.	685.4	12.4	78.5	144.6	143.6	144.8	161.4
	Cu kt	10.8	0.15	1.28	2.56	2.82	2.35	1.63
Recovered	Au kOz.	644.2	11.6	73.8	135.9	135.0	136.1	151.7
Recovered	Cu kt	9.9	0.13	1.18	2.35	2.59	2.16	1.50
Development (waste)	m	15,287	644	3,919	4,066	3,472	2,127	1,059
Development (ore)	m	13,957	455	2,100	3,247	3,529	3,086	1,539
Cost								
Capital - Expansion	\$M	13.6		13.6				
Capital - Kora	\$M							
Capital - Development	\$M	59.3	2.5	15.9	15.5	13.3	8.4	3.8
Capital - Sustaining	\$M	11.2	0.1	9.1	0.7	0.6	0.5	0.4
Operating - Mining	\$M	149.6	2.9	18.0	31.8	34.0	34.0	28.9
Operating - Processing	\$M	129.5	4.9	21.1	26.2	27.1	27.1	23.1
Total cost	\$M	363.1	10.3	77.6	74.1	75.0	70.0	56.1
Cost per Oz.	\$/oz.	530						
Net Revenue - Au	\$M	801.8	14.5	91.9	169.2	168.0	169.4	188.8
Net Revenue - Cu	\$M	60.2	0.8	7.1	14.3	15.7	13.1	9.1
Net Cashflow	\$M	499	5.0	21.4	109.4	108.8	112.5	141.8
DCF5%	\$M	\$402						

## 22.2 KORA PHASE MINE PLAN

Key estimates from the Kora Mine Scoping Study prepared by AMDAD are:

- Over a 9 year operating life the plant would treat 3.2 Million tonnes averaging 7.1 g/t Au, 25 g/t Ag and 1.7% Cu.
- This would generate an estimated positive cash flow of US\$532 million using current metal prices. This cashflow includes conceptual allowances for capital.
- Production of an estimated average of 90,000 Au ozs and 6,500t Cu per annum over an 8-year period from Year 2024 through to Year 2031.
- An estimated Pre-tax NPV of US\$374 million; using current metal prices, exchange rate and a 5% discount rate;

- Kora Capital Cost is estimated to be US\$38.4 million. Development Capital Cost is estimated to be a further US\$87.3 million and Sustaining capital is US\$6.0 million over the LOM.
- Operating Cost per tonne is estimated to be US\$153/tonne for the LOM.

Annual cashflows are presented below for the Kora LOM plan.

**Table 59: Kora Phase Simplistic Cashflow Model for LOM Plan**

Kora		Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Mill Feed		Total										
Prod. Dev. Ore	kt	3,208		59	400	400	400	400	400	400	400	349
	Au g/t	7.11		5.01	5.60	6.17	7.14	7.84	7.15	7.77	8.40	7.07
	Ag g/t	24.85		17.48	21.23	23.74	28.22	28.93	26.48	21.63	23.89	25.87
	Cu %	1.66		1.39	1.72	1.78	1.82	1.71	1.61	1.50	1.53	1.59
	Au kOz.	732.9		9.5	72.0	79.3	91.9	100.9	91.9	99.9	108.1	79.4
	Cu kt	53.1		0.82	6.90	7.11	7.29	6.86	6.42	6.02	6.12	5.56
Recovered	Au kOz.	688.9		8.9	67.7	74.5	86.4	94.8	86.4	93.93	101.58	74.67
Recovered	Cu kt	48.9		0.76	6.35	6.54	6.71	6.31	5.91	5.54	5.63	5.12
Development (waste)	m	20,848	1,579	3,873	4,883	3,093	1,219	1,161	1,315	1,501	1,034	1,189
Development (ore)	m	15,240		946	926	1,037	1,789	2,003	2,347	2,189	2,387	1,616
Cost												
Capital - Expansion	\$M											
Capital - Kora	\$M	38.4	5.0	14.0	6.5			6.5	6.5			
Capital - Development	\$M	87.3	9.0	23.5	18.0	10.0	4.6	4.2	5.3	4.9	4.6	3.1
Capital - Sustaining	\$M	6.0	0.7	1.0	0.9	0.7	0.5	0.5	0.6	0.5	0.5	0.1
Operating - Mining	\$M	272.9		5.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	29.7
Operating - Processing	\$M	217.7		4.0	27.1	27.1	27.1	27.1	27.1	27.1	27.1	23.7
Total cost	\$M	622.3	14.6	47.5	86.6	71.9	66.3	72.4	73.5	66.6	66.3	56.6
Cost per Oz.	\$/oz.	849										
Net Revenue - Au	\$M	857.4		11.1	84.2	92.8	107.5	118.0	107.6	116.9	126.4	92.9
Net Revenue - Cu	\$M	296.6		4.6	38.5	39.7	40.7	38.3	35.9	33.6	34.2	31.1
Net Cashflow	\$M	532	-14.6	-31.8	36.2	60.6	81.9	83.9	69.9	83.9	94.3	67.4
DCF5%	\$M	\$374										

### 22.3 KORA NORTH AND KORA COMBINED MINE PLAN

Key estimates from the Kora North and Kora Mine Scoping Study prepared by AMDAD are:

- Over a 13 year operating life the plant would treat 4.9 Million tonnes averaging 9.0 g/t Au, 20 g/t Ag and 1.3% Cu.
- This would generate an estimated positive cash flow of US\$1,031 million using current metal prices. This cashflow includes conceptual allowances for capital.
- An estimated Pre-tax NPV of US\$710 million; using current metal prices, exchange rate and a 5% discount rate;

Annual cashflows are presented below for the Combined LOM plan below.

**Table 60: Combined Kora North and Kora Simplistic Cashflow Model for LOM Plan**

Kora North and Kora		Year	2018Q4	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Mill Feed		Total														
Prod. Dev. Ore	kt	4,920	26	183	363	400	400	399	400	400	400	400	400	400	400	349
	Au g/t	8.97	14.54	13.38	12.38	11.18	11.27	13.32	5.60	6.17	7.14	7.84	7.15	7.77	8.40	7.07
	Ag g/t	20.26	10.40	12.32	12.31	12.52	11.60	10.87	21.23	23.74	28.22	28.93	26.48	21.63	23.89	25.87
	Cu %	1.30	0.55	0.70	0.70	0.70	0.59	0.61	1.72	1.78	1.82	1.71	1.61	1.50	1.53	1.59
	Au kOz.	1,418	12.4	78.5	144.6	143.6	144.8	170.9	72.0	79.3	91.9	100.9	91.9	99.9	108.1	79.4
	Cu kt	64	0.15	1.28	2.56	2.82	2.35	2.45	6.90	7.11	7.29	6.86	6.42	6.02	6.12	5.56
Recovered	Au kOz.	1,333	11.6	73.8	135.9	135.0	136.1	160.7	67.7	74.5	86.4	94.8	86.4	93.9	101.6	74.7
Recovered	Cu kt	59	0.1	1.2	2.4	2.6	2.2	2.3	6.3	6.5	6.7	6.3	5.9	5.5	5.6	5.1
Development (waste)	m	36,136	644	3,919	4,066	3,472	3,706	4,932	4,883	3,093	1,219	1,161	1,315	1,501	1,034	1,189
Development (ore)	m	29,197	455	2,100	3,247	3,529	3,086	2,485	926	1,037	1,789	2,003	2,347	2,189	2,387	1,616
Cost																
Capital - Expansion	\$M	13.6		13.6												
Capital - Kora	\$M	38.4				5.0	14.0	6.5				6.5	6.5			
Capital - Development	\$M	146.6	2.5	15.9	15.5	13.3	17.4	27.3	18.0	10.0	4.6	4.2	5.3	4.9	4.6	3.1
Capital - Sustaining	\$M	17.3	0.1	9.1	0.7	0.6	1.1	1.4	0.9	0.7	0.5	0.5	0.6	0.5	0.5	0.1
Operating - Mining	\$M	422.4	2.9	18.0	31.8	34.0	34.0	33.9	34.0	34.0	34.0	34.0	34.0	34.0	34.0	29.7
Operating - Processing	\$M	347.2	4.9	21.1	26.2	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	27.1	23.7
Total Cost	\$M	985.4	10.3	77.6	74.1	75.0	84.7	103.6	86.6	71.9	66.3	72.4	73.5	66.6	66.3	56.6
Cost per Oz.	\$/oz.	695	834	988	512	522	585	606	1,202	906	722	718	800	666	614	712
Net Revenue - Au	\$M	1,659.2	14.5	91.9	169.2	168.0	169.4	199.9	84.2	92.8	107.5	118.0	107.6	116.9	126.4	92.9
Net Revenue - Cu	\$M	356.9	0.8	7.1	14.3	15.7	13.1	13.7	38.5	39.7	40.7	38.3	35.9	33.6	34.2	31.1
Total Revenue	\$M	2,016.0	15.3	99.0	183.5	183.8	182.5	213.6	122.8	132.5	148.2	156.3	143.4	150.5	160.6	124.0
Net Cashflow	\$M	1,031	5.0	21.4	109.4	108.8	97.9	110.0	36.2	60.6	81.9	83.9	69.9	83.9	94.3	67.4
DCF5%	\$M	710														

## 23 ADJACENT PROPERTIES

Kainantu occurs within a well-endowed belt of epithermal and porphyry style mineralization that reportedly contains several major deposits (Figure 103). Nolidan is unable to verify this information and the information is not necessarily indicative of the mineralization on the property that is the subject of this technical report.

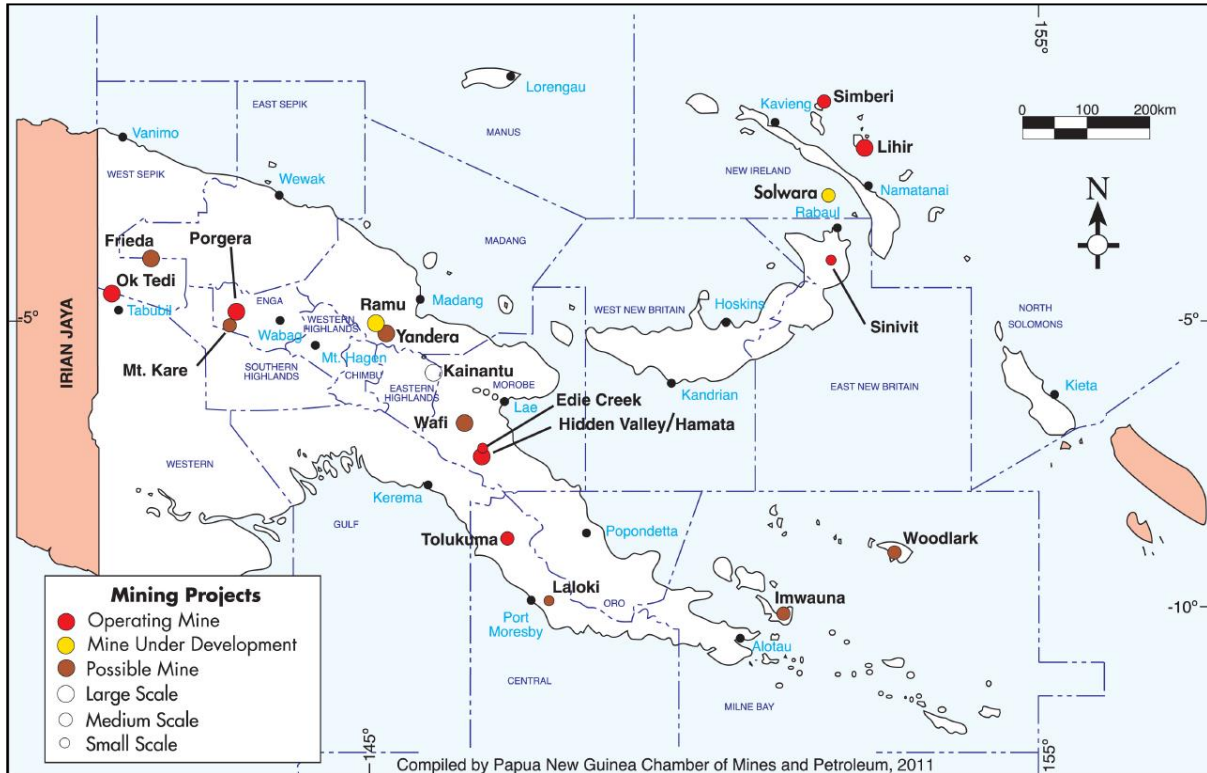


Figure 103. Location of Kainantu project and gold deposits within major mineralized province.

Source: PNG Chamber Mines and Petroleum 2011

K92ML does not have any interest in any adjacent properties.

## 24 OTHER RELEVANT DATA AND INFORMATION

Rehabilitation of the mine workings by K92ML commenced in March 2016. Refurbishment of the treatment plant by Mincore and Sun Engineering commenced in May 2016 and the plant was re-commissioned in September 2016. In order to comply with the terms of the ML150 renewal K92ML was required to refurbish the mine and mill by December 31, 2016. Rehabilitation of the mine and mill as required by the terms of ML150 has now been completed.

K92 has completed the refurbishment of the Kainantu mine and mill, and restarted the Irumafimpa mine project and has started the Kora mine project.

The Company announced the declaration of commercial production, effective February 1, 2018, at its Kainantu Gold Mine in Papua New Guinea.

K92 defined commercial production as having commenced stope production underground, achieving a minimum of 60% of designed gold production and a minimum of 90% of designed metal recovery from the process plant over a 30-day period. These metrics were met during the month of January 2018 and the Company expects them to be maintained going forward, and therefore declared commercial production effective February 1, 2018.

## 25 INTERPRETATION AND CONCLUSIONS

### 25.1 EXPLORATION POTENTIAL

The Kainantu project is located in a recognized copper-gold province, as evidenced by the underlying geology and presence of nearby major projects operated by global majors Barrick, Newcrest and Harmony. There remain a significant number of major untested and early stage targets. Within ML150 are the Kora lodes which are strongly mineralized at the limit of drilling and open in all directions, as well as the Judd, Karempa and other unnamed mineralized lodes parallel to defined resources which have economically attractive grade in surface and/or drill samples from very limited work to date.

Existing mineral resources at Irumafimpa and Kora are summarized in Section 6 and those at Kora North are summarized in Section 14 as well as in the 'Summary' chapter of this report. Significant opportunity remains for resource extension within the immediate mine environment.

### 25.2 SCOPING STUDY RESULTS

The preliminary economic assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

It should be noted that the mine plan and scoping studies prepared by AMAD for the Kora North and Kora deposits are not based on Mineral Reserves. The estimates of tonnes and grade reported and scheduled in both the Kora North and Kora Scoping Studies do not constitute a Mineral Reserve because: -

- The Mineral Resource estimate from which the tonnes and grade are derived are predominantly Inferred Resources. Inferred Resources are at too low a level of confidence to allow conversion to Mineral Reserves.
- There is insufficient geotechnical information to be confident in development and extraction design parameters and costs and the mine plan can only be considered conceptual.
- Limited metallurgical test work has been completed for the copper-gold mineralization and further work will be required to confirm the processing cost and recovery assumptions. However, all material treated in 2018 has been from the Kora North mining area which to date support the assumptions made.

Any reference to "ore" in the Scoping Study is simply a reference to that part of the Mineral Resource, with appropriate adjustment for dilution and loss, that would be intended as mill feed, rather than waste, and which would be a Mineral Reserve if all requirements of CIM Definition Standards for Mineral Resources and Mineral Reserves were met.

Non-mining economic and processing parameters assumed and referred to in the studies are conceptual. They were applied for the purpose of identifying the part of the Resource that notionally may be economic, in order to prepare conceptual extraction designs. Schedules are based on conceptual development and stoping quantities and not practical designs. Cashflow schedules are based on these assumed parameters. They should be treated with caution, and they should not be interpreted as a measure of the value of the deposit.

#### 25.2.1 Kora North

The Kora North preliminary economic assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations



applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

Key estimates from the Kora North Mine Plan prepared by AMDAD are:

- Planned treatment of 1.71Mt tonnes at 13 g/t Au, 12 g/t Ag, 0.63%Cu over the 5.25 LOM plan.
- This would generate an estimated positive cash flow of US\$499 million using current metal prices. This cashflow includes conceptual allowances for capital.
- Production of an estimated average of 135,000 Au ozs and 2,100t Cu per annum over a 5-year period from Year 2019 through to Year 2023.
- An estimated Pre-tax NPV of US\$402 million; using current metal prices, exchange rate and a 5% discount rate;
- Capital Expansion Cost is estimated to be US\$13.6 million. Development Capital Cost is estimated to be a further US\$59.3 million and Sustaining capital is US\$11.2 million over the LOM.
- Operating Cost per tonne is estimated to be US\$163/tonne for the LOM

### 25.2.2 Kora

The Kora preliminary economic assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

Key estimates from the Kora Mine Scoping Study prepared by AMDAD are:

- Over a 9 year operating life the plant would treat 3.2 Million tonnes averaging 7.1 g/t Au, 25 g/t Ag and 1.7% Cu.
- This would generate an estimated positive cash flow of US\$532 million using current metal prices. This cashflow includes conceptual allowances for capital.
- Production of an estimated average of 90,000 Au ozs and 6,500t Cu per annum over an 8-year period from Year 2024 through to Year 2031.
- An estimated Pre-tax NPV of US\$374 million; using current metal prices, exchange rate and a 5% discount rate;
- Kora Capital Cost is estimated to be US\$38.4 million. Development Capital Cost is estimated to be a further US\$87.3 million and Sustaining capital is US\$6.0 million over the LOM.
- Operating Cost per tonne is estimated to be US\$153/tonne for the LOM.

### 25.2.3 Kora North and Kora Combined

The Kora preliminary economic assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.

Key estimates from the Kora North and Kora Combined Mine Scoping Study prepared by AMDAD are:

- Over a 13 year operating life the plant would treat 4.9 Million tonnes averaging 9.0 g/t Au, 20 g/t Ag and 1.3% Cu.

- This would generate an estimated positive cash flow of US\$1,031 million using current metal prices. This cashflow includes conceptual allowances for capital.
- An estimated Pre-tax NPV of US\$710 million; using current metal prices, exchange rate and a 5% discount rate;

### 25.3 TREATMENT PLANT UPGRADE

In August 2016 Mincore completed a scoping study on the requirements for an upgrade of the existing plant to allow treatment of Kora ore at a proposed rate of 400,000 tpa (Mincore, 2016). This was subsequently updated (Mincore 2018) following the in-progress installation of the gravity gold circuit and new lime preparation and dosing facility.

Mincore concluded that:

- There is sufficient crushing and milling (comminution) power in the current plant to grind 50tph to the required grind size of  $P_{80}$  of 106  $\mu\text{m}$ .
- The current two stage crushing circuit is rated at 68tph producing a product size  $P_{80}$  of 10-12mm. However, the secondary crusher has been capacity limited during operations in 2018 and a new larger secondary crusher is proposed, with the existing crusher relegated to standby service. The new larger secondary crusher will also provide a better crushed ore size distribution to maximise throughput of the downstream milling circuit.
- Additional flotation capacity is required to achieve acceptable residence times for each cell. There is sufficient space to install additional cells if future test work identifies a requirement for longer residence time.
- The existing concentrate thickener and filter is adequate for 400,000tpa of Kora feed averaging 1.7% copper.
- The existing tailings line is adequate but a full pump upgrade will be required.

### 25.4 RISK ASSESSMENT

Key Risks to the success of the Kainantu project are considered to be:

- The preliminary economic assessment is preliminary in nature. It includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the preliminary economic assessment will be realized.
- All of the Kora Mineral Resource and a significant component of the Kora North Mineral Resource are classified as Inferred Mineral Resources. Inferred Mineral Resources are considered too uncertain with regard to geological and grade continuity to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the outcomes of the preliminary economic assessment will be realized.
- Assumptions for slope geotechnical design and for development conditions and support are generally translated from historical experience and assessments of geotechnical conditions at Irumafimpa, as well as mining conditions experienced to-date at Kora North. However, no geotechnical investigations have been undertaken by a geotechnical specialist for Kora North and Kora.
- Mine workings at Kora North are experiencing substantial groundwater water inflows. The water inflows are drained to the 800 Portal by the existing access incline. However, a

comprehensive program is required to investigate and manage water inflows and identify water bearing structures

- The capacity of the access incline and proposed truck haulage is identified as a major risk to achieving the scheduled rate of production. Additional mining equipment is required to achieve the scheduled mining activity.
- Satisfactory metallurgical performance of Kora North and Kora mineralization has to be confirmed
- The remaining capacity of the TSF would be around 238,000t dry. It is likely that a wall lift will be required in 2020, based on current TSF capacity.
- Possible breakdown in government and community relations.

## **26 RECOMMENDATIONS**

### **26.1 EXPLORATION**

Drilling should continue to concentrate on infill drilling of current resources and extensions to veins within ML 150.

### **26.2 MINE**

Geotechnical data collection should be a key part of the exploration drilling at Kora North and Kora, to inform specialist geotechnical studies and thereby confirm key mine design parameters.

Groundwater investigation by hydrogeological specialists are recommended to determine expected and on-going water inflows as the basis for water management plans.

A comprehensive ventilation study is required to analyse all ventilation options.

Investigations are required for the mine materials handling, focusing on the capacity of the decline for truck haulage as well as size and numbers of trucks.

### **26.3 TREATMENT PLANT**

Confirmatory metallurgical test work should be completed on an ongoing basis to confirm that the metallurgical performance indicated in the initial metallurgical test work completed by Barrick is achievable.

Confirmatory test work should be completed to optimise flotation concentrate grade and recovery at the expanded throughput.

The timing for the TSF wall lifts should be confirmed, as it appears a lift will be required in 2020.

For and on behalf of Nolidan Mining Consultants

Anthony Woodward BSc Hons., M.Sc., MAIG

For and on behalf of H&S Consultants

Simon Tear BSc (Hons), MAusIMM, PGeo IGI

For and on behalf of AMDAD

Christopher Desoe BE (Min)(Hons), FAusIMM, RPEQ

For and on behalf of Mincore

Lisa J Park GAICD FAusIMM.

Effective Date: 30 September 2018

## 27 REFERENCES

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## 28 CERTIFICATE OF QUALIFIED PERSON

### ANTHONY JAMES WOODWARD

I, Anthony James Woodward hereby certify that:

I am a Consulting Geologist and Professional Geoscientist residing at 14 Carlia Street, Wynnum West, Queensland 4178, Australia (Telephone +61-7-3396 9584). I am independent of the issuer as independence is described in Section 1.5 of NI 43-101.

I graduated from the University of Nottingham, UK in 1968 with a B.Sc. (Hons) in Geology and from James Cook University, Townsville, Australia in 1976 with a M.Sc in Exploration and Mining Geology.

I have over 35 years' experience in the minerals industry as a Geologist in the fields of mineral exploration, mine geology and mineral resource estimation. I have had senior exploration roles with Buka Gold, Niugini Mining, Eltin Minerals and Oakbridge Ltd. I have conducted evaluation of advanced exploration and mining projects in Australia, Brazil, Fiji, Indonesia, Kazakhstan, New Zealand, and Turkey. I worked as Technical Services Manager and Chief Geologist at the Vatukoula Gold Mine in Fiji (Emperor Mines Ltd) from 1995 to 2005 and as Technical Services Manager for Anvil Mining Congo at the Kinsevere copper mine, DRC from 2007 to 2008. At these mines I was responsible for mine and exploration geology, surveying, mine planning, environment, drilling, and assay laboratory. At both operations I spent time as Acting General Manager of Operations. In this role I supervised multiple disciplines and integrated their work into operational mine plans. Most recently, I have been an exploration consultant in the Philippines involved with total exploration program management on tenements prospective for both epithermal gold-molybdenum and porphyry copper-gold deposits including regional exploration targeting through to deposit resource drilling.

Applicable to the Kainantu Project is my extensive experience in mineral deposits in volcanic terrains, specifically the Vatukoula and Tuvatu epithermal gold deposits in Fiji. I have also worked on epithermal/hydrothermal and porphyry-style mineralization in similar environments in Papua New Guinea, Fiji, New Zealand, Philippines, Indonesia, Brazil and Turkey as well as Australia.

I am a Member of the Australian Institute of Geoscientists (Member No. 2668).

For the purposes of the Technical Report entitled: "INDEPENDENT TECHNICAL REPORT, MINERAL RESOURCE ESTIMATE UPDATE AND PRELIMINARY ECONOMIC ASSESSMENT OF KORA NORTH AND KORA GOLD DEPOSITS, KAINANTU PROJECT, PAPUA NEW GUINEA", 30th September 2018, of which I am a part author and responsible person. I am a Qualified Person as defined in National Instrument 43-101 ("the Rule").

I am responsible either wholly or partly for the preparation of Sections 1 to 9, 13, 15, 18 to 20, and 23 to 27 of the technical report.

I visited the Kainantu Project on the 12th and 13th of November 2014 and 21st to 25th November, 2016 and have had no prior involvement with the Kainantu property.

I have read the Rule and this technical report is prepared in compliance with its provisions. I have read the definition of "qualified person" set out in the Rule and certify that by reason of my education, affiliation with a professional association (as defined in the Rule) and past relevant work experience, I fulfil the requirement to be a "qualified person" for the purposes of the Rule.

To the best of my knowledge, information and belief the technical report contains all scientific and technical information that is required to be disclosed in order to make this report not misleading.

I have no direct or indirect interest in the properties which are the subject of this report and I have had no prior involvement with the Property. I do not hold, directly or indirectly, any shares in K92ML, K92PNG, K92 Holdings, K92 or other companies with interests in the exploration assets thereof. I am independent of K92ML, K92PNG, K92 Holdings, K92, and, the Property, as independence is described by Section 1.5 of NI 43-101.

I will receive only normal consulting fees for the preparation of this report.

Dated at Brisbane this 7th January 2019.

Respectfully submitted

(signed) "Anthony James Woodward"

Anthony James Woodward, BSc Hons, M.Sc., MAIG  
Qualified Person

## CERTIFICATE OF QUALIFIED PERSON

### CHRISTOPHER GABOR DESOE

I, Christopher Gabor Desoe of Brisbane, Australia do hereby certify that:

1. I am Manager - Mining with Australian Mine Design and Development Pty Ltd with a business address at Level 4, 46 Edward Street Brisbane, Queensland 4000 Australia.
2. This certificate applies to the technical report titled Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea dated 7 January 2019 with an effective date of 30 September 2018 (the "Technical Report").
3. I am a Fellow and Chartered Professional (Mining) of the Australasian Institute of Mining and Metallurgy, number 104206.
4. I graduated from the University of New South Wales, Australia, in 1983, with a B.E. (Min)(Hons).
5. I have 35 years of experience in the mining industry of which more than 15 years is in hard rock underground mining. Applicable to the Kainantu Project is my considerable experience in narrow underground operations and planning including Imwauna Gold Project in PNG, a confidential narrow vein gold project in Columbia, Ban Phuc Nickel Mine in Vietnam, the Mount Colin, Reward, West 45 and Selwyn 257 Copper Gold Mines, Merlin Molybdenum Rhenium deposit and Mount Isa Lead Zinc Mine all in North Queensland, Australia, and Renison Tin Mine in Tasmania, Australia.
6. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that I am a "qualified person" for the purposes of NI 43-101.
7. That I Christopher Gabor Desoe last visited the Kainantu mine site during 2016 for eight days.
8. I am responsible for section 16 of the Technical Report, for the conceptual mining costs presented in section 21 based on cost assumptions provided by K92ML, and for cashflows presented in section 22 based on mining quantities estimated by AMDAD and the economic and processing assumptions provided by K92ML.
9. I am independent of K92ML as described in Section 1.5 of NI 43-101.
10. I have had no involvement with the property that is subject to the Technical Report prior to 2016.
11. I, or any affiliated entity of mine, have not earned the majority of our income during the preceding three years from K92ML, or any associated or affiliated companies.
12. I have no interest in the subject property, either directly or indirectly.
13. I, or any affiliated entity of mine, do not own, directly or indirectly, nor expect to receive, any interest in the properties or securities of K92ML or any associated or affiliated companies.
14. I have read NI 43-101 and the parts of the Technical Report for which I am responsible have been prepared in compliance with that instrument.
15. That as of the effective date of the Technical Report, to the best of my knowledge, information and belief, the parts of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed this 7th day of January, 2019 at Brisbane, Queensland, Australia.

*"Christopher Desoe"*

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Christopher Gabor Desoe, BE (Min)(Hons), FAusIMM, RPEQ,  
Manager – Mining, Australian Mine Design & Development Pty Ltd



## CERTIFICATE OF QUALIFIED PERSON

### LISA JANE PARK

I hereby state:

1. My name is Lisa Jane Park and I am the principal of the firm Process Engineering Options of 13 William St Hawthorn, VIC 3122, Australia.
2. I am a practising process engineer registered as a Fellow with the Australasian Institute of Mining and Metallurgy. My membership number is 112751.
3. I graduated with a B Eng degree in Chemical Engineering in 1994 from the University of Melbourne, Australia. I also hold a Master degree in Applied Finance from the Queensland University of Technology, Australia.
4. I have practised my profession for 24 years, since 1994. I have experience in project development, operations and construction. My previous experience in copper-gold projects includes the Silangan project (Philippines), Pebble project (Alaska, USA), Waisoi project (Fiji), Didipio project (Philippines) and many other projects in various capacities over the years.
5. I am a "qualified person" as that term is defined in National Instrument NI 43-101 (Standards of Disclosure for Mining Studies) (the "Instrument").
6. I have not visited the K92 Mining Ltd project area as at 7 January 2019.
7. I assisted with the K92 Mining Ltd scrubber project, for Mincore Pty Ltd in 2016.
8. I have assisted in the preparation of the study by Mincore Pty Ltd dated 5 February 2017 and I have reviewed the updated study by Mincore dated 7 December 2018.
9. For the purposes of the Technical Report entitled "Independent Technical Report, Mineral Resource Estimate update and preliminary economic assessment of Kora North and Kora gold deposits, Kainantu project, Papua New Guinea" (the "Report"), prepared by Nolidan Mineral Consultants, H&S Consultants, Australian Mine Design and Development, and Mincore, effective date 30 September 2018, I am a part author and responsible person.
10. Specifically, I am responsible for the preparation of section 13.2 to 13.4, and 13.6 Operations and Recovery; section 17 Recovery methods; section 25.2.3 Treatment plant upgrade; and section 26.3 Treatment plant.
11. I am a Qualified Person as defined in National Instrument 43-101 ("the Rule").
12. At the effective date of the technical report, to the best of my knowledge, information, and belief, the above parts contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.
13. I am Independent of the K92 Mining Ltd project pursuant to Section 1.5 of the Instrument.
14. I have read the National Instrument and Form 43-101 F1 (the "Form") and parts of the study for which I have assisted to ensure it has been prepared in compliance with the Instrument and the Form.
15. I do not have nor do I expect to receive a direct or indirect interest in the K92 Mining Ltd project, and I do not beneficially own, directly or indirectly, securities of K92 Mining Ltd.

Dated at Perth, Western Australia, on 7 January 2019.

**Lisa Jane Park**  
Principal  
Process Engineering Options

## CERTIFICATE OF QUALIFIED PERSON

### Simon James Tear

I, Simon James Tear, BSc(Hons), P.Geo, EurGeol as a co-author of this report "INDEPENDENT TECHNICAL REPORT, MINERAL RESOURCE ESTIMATE UPDATE AND PRELIMINARY ECONOMIC ASSESSMENT OF KORA NORTH AND KORA GOLD DEPOSITS, KAINANTU PROJECT, PAPUA NEW GUINEA", prepared for K92ML, effective date 30<sup>th</sup> September 2018, do hereby certify that :

I am a Director and Consultant Geologist of H&S Consultants Pty Ltd, with a business address of Level 4, 46 Edward Street, Brisbane, QLD 4000, Australia.

I graduated from the Royal School of Mines, Imperial College, London, UK in 1983 with a BSc (Hons) degree in Mining Geology.

I am registered as a Professional Geologist with the Institute of Geologists of Ireland (registration number 17) and as a European Geologist with the European Federation of Geologists (registration number 26). I have worked as a geologist in the mining industry for over 35 years. I have extensive experience with a variety of different types of mineral deposits and commodities in Europe, Africa, Sth America, Asia and Australia. I have over 19 years' experience with the resource estimation process including 3.5 years minesite experience (open pit and underground), and have worked on feasibility studies. I have completed over 125 resource estimations on a variety of deposit types including narrow vein gold, structural gold, nickel laterite, stratabound base metal including Iron Ore and industrial minerals. I have completed over 25 reports that are in accordance with the JORC Code and Guidelines and/or NI43-101 rules.

My relevant experience for the purpose of this Technical Report is:

- Involvement from high level review to geological interpretation and resource estimation for over 50 gold projects worldwide including narrow vein epithermal and mesothermal gold deposits.
- Completion of geological modelling and/or resource estimates for the following narrow gold vein deposits: Cavanacaw (N.Ireland), Nbanganga (Burkina Faso), Kestanalik (Turkey), Savoyardy (Kyrgyzstan), Woolgar, Barambah, Glen Eva and Koala (all Queensland).
- Due diligence/property assessment for the following narrow gold vein deposits/mines: Curraghinalt (N.Ireland), Tolukuma (PNG), Lorena, Pajingo ( both Queensland), Bronzewing, Marda (both Western Australia)

I have visited the project's mining lease and operations on one occasion dated 21st to 23rd October for 3 days.

I have read the definition of "qualified person" set out in Section 1.1 of the national Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of this Technical Report.

I am responsible, either wholly or partly, for Sections 10, 11, 12 and 14, of the Technical Report.

I do not hold, directly or indirectly, any shares in K92ML, K92PNG, K92 Holdings, K92 or other companies with interests in the exploration assets thereof. I am independent of K92ML, K92PNG, K92 Holdings, K92, and, the Property, as independence is described by Section 1.5 of NI 43-101.

Prior to 2018, I had no involvement with the property that is the subject of the Technical Report.

I have read NI 43-101 and this Technical Report has been prepared in compliance with the version of NI43-101 that came into effect on 30 June 2011.

To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Simon J Tear PGeo, EurGeol  
Director & Consultant Geologist  
H&S Consultants Pty Ltd

Date: 7<sup>th</sup> January 2019.

## 29 APPENDIX 1: COLLAR LOCATIONS OF SIGNIFICANT DRILL INTERSECTIONS

**Table 1A: Coordinates of significant intercepts K92 Mining Limited, Judd Vein Deposit**

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
KMDD0001	60562.44	30212.51	950.38	0.7	271.28	200.6	Judd
KMDD0002	60564.06	30212.74	950.38	0.4	299.20	176.4	Judd
KMDD0003	60563.95	30212.89	951.77	28.0	299.55	168.0	Judd
KMDD0004	60564.00	30212.72	949.62	-26.2	297.89	144.6	Judd
KMDD0005	60565.04	30215.42	950.00	-1.4	306.00	190.0	Judd
KMDD0006	60564.591	30216.047	951.7	28	307.8	169	Judd
KMDD0007	60564.885	30216.634	950	-8.5	321.185	220.2	Judd

**Table 1B: Coordinates of significant intercepts K92 Mining Limited, Irumafimpa Deposit:**

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
GCDD0001	59561.41	29918.50	1235.22	-0.4	226.38	72.0	Irumafimpa
GCDD0002	59560.90	29917.89	1234.63	-13.0	226.56	69.1	Irumafimpa
GCDD0003	59560.95	29917.98	1234.01	-26.4	225.45	73.6	Irumafimpa
GCDD0004	59561.58	29917.28	1235.18	-2.3	239.27	67.1	Irumafimpa
GCDD0005	59561.57	29917.27	1234.54	-15.0	239.27	72.0	Irumafimpa
GCDD0006	59656.34	29922.65	1247.42	-25.7	292.22	65.7	Irumafimpa
GCDD0007	59656.50	29922.44	1248.20	-9.7	291.94	80.0	Irumafimpa
GCDD0008	59656.27	29923.08	1246.96	-36.8	292	80.2	Irumafimpa
GCDD0009	59656.12	29919.37	1247.77	-11	274	75.2	Irumafimpa
GCDD0010	59656.41	29922.49	1247.88	-28	274	70.3	Irumafimpa
GCDD0011	59655.68	29922.74	1247.17	-41	276	72	Irumafimpa
GCDD0012	59652.93	29916.76	1247.36	-10.28	254.18	54.6	Irumafimpa
GCDD0013	59654.12	29921.09	1247.21	-27.15	254.21	63.6	Irumafimpa
GCDD0014	59654.41	29922.1	1247.08	-39.3	254.57	37.3	Irumafimpa
GCDD0014a	59654.39	29921.98	1247.06	-39.04	254.31	74	Irumafimpa
GCDD0015	59653.01	29921.1	1247.38	-23.74	239.81	69.2	Irumafimpa
GCDD0016	59655.27	29924.96	1248.5	-36	239	72.9	Irumafimpa
GCDD0017	59653.01	29921.04	1248.38	-8.77	240.1	63.3	Irumafimpa
GCDD0018	59643.43	29950.55	1233.51	-23.1	242.55	95.7	Irumafimpa
GCDD0019	59643.32	29950.25	1233.97	-6.45	243.16	95	Irumafimpa
GCDD0020	59653.17	29920.97	1250.42	15.41	248.14	44.2	Irumafimpa
GCDD0020A	59653.17	29920.97	1250.06	16.38	242.67	72.1	Irumafimpa
GCDD0021	59656.22	29922.84	1249.59	13.67	290.42	105.2	Irumafimpa
GCDD0022	59643.47	29950.59	1233.47	-35.42	242.86	76.7	Irumafimpa
GCDD0023	59655.6	29921.25	1249.79	15.89	270.44	79.9	Irumafimpa
GCDD0024	59643.37	29950.4	1234.75	2.82	242.85	73	Irumafimpa
GCDD0025	59656.428	29923.16	1249.48	15.38	304.21	70	Irumafimpa

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
GCDD0026	59644.73	29946.53	1234.11	-8.87	249.76	81	Irumafimpa
GCDD0027	59644.76	29946.53	1233.84	-18.52	251.03	86.4	Irumafimpa
GCDD0028	59644.55	29946.08	1233.25	-31.2	248.43	97	Irumafimpa
GCDD0029	59657.11	29923.50	1249.45	13.46	320.19	100.1	Irumafimpa
GCDD0030	59643.36	29950.39	1234.74	7.94	242.41	104.7	Irumafimpa
GCDD0031	59729.501	29939.585	1262.08	-3.61	276.98	80	Irumafimpa
GCDD0032	59729.51	29939.751	1261.14	-26.25	273.87	92.2	Irumafimpa
GCDD0033	59643.19	29950.19	1234.15	-4.22	233.83	105.1	Irumafimpa
GCDD0034	59643.29	29950.35	1233.90	-14.77	233.25	105	Irumafimpa
GCDD0035	59729.45	29940.57	1261.02	-39.32	275.97	99.9	Irumafimpa
GCDD0036	59648.63	29946.27	1234.44	5.54	312.43	101	Irumafimpa
GCDD0037	59648.63	29946.27	1234.44	5.54	312.43	100.1	Irumafimpa
GCDD0038	59659.41	29923.48	1249.44	10.35	328.20	64.8	Irumafimpa
GCDD0039	59656.51	29923.47	1249.47	13.92	309.79	88.2	Irumafimpa
GCDD0040	59656.96	29922.98	1248.57	-4.78	311.20	90	Irumafimpa
GCDD0041	59648.50	29946.33	1233.91	-21.61	311.69	127	Irumafimpa
GCDD0042	59648.89	29947.34	1233.74	-12.15	320.11	138	Irumafimpa
GCDD0043	59649.04	29947.28	1234.01	-5.31	319.71	133.7	Irumafimpa
GCDD0044	59648.84	29947.31	1233.57	-20.20	318.88	148.1	Irumafimpa
GCDD0045	59648.81	29947.35	1233.35	-31.54	318.13	126.2	Irumafimpa
GCDD0046	59729.95	29938.76	1262.15	-2.44	262.42	80	Irumafimpa
GCDD0047	59643.35	29950.65	1233.22	-33.91	233.45	124.6	Irumafimpa
GCDD0048	59730.14	29939.80	1261.45	-18.34	262.57	96	Irumafimpa
GCDD0049	59730.10	29939.91	1260.94	-29.90	261.53	70	Irumafimpa
GCDD0050	59643.73	29950.34	1233.03	-36.24	243.07	120	Irumafimpa
GCDD0051	59729.52	29939.60	1262.14	-2.36	292.33	80.2	Irumafimpa
GCDD0052	59644.91	29946.86	1233.37	-39.02	250.51	104.3	Irumafimpa
GCDD0053	59646.93	29945.96	1233.16	-39.61	270.00	101.5	Irumafimpa
GCDD0054	59729.51	29939.63	1262.14	-0.94	292.51	89.3	Irumafimpa
GCDD0055	59730.51	29939.61	1262.09	-2.77	303.03	90.2	Irumafimpa
GCDD0056	59647.14	29945.93	1233.16	-38.91	278.87	102.2	Irumafimpa
GCDD0057	59648.16	29943.65	1231.40	-37.04	289.37	102	Irumafimpa
GCDD0058	59730.36	29939.87	1261.13	-24.12	303.22	102	Irumafimpa
GCDD0059	59647.33	29945.99	1233.27	-37.04	289.37	114	Irumafimpa
GCDD0060	59726.12	29940.46	1262.07	-2.57	235.24	42	Irumafimpa
GCDD0061	59726.18	29940.52	1261.20	-21.80	236.05	46	Irumafimpa
GCDD0062	59726.33	29940.75	1260.74	-38.59	236.11	59.1	Irumafimpa
GCDD0063	59742.42	29930.69	1218.32	13.65	282.49	70	Irumafimpa
GCDD0064	59742.00	29930.79	1218.41	14.34	258.53	50.9	Irumafimpa
GCDD0065	59741.97	29930.80	1216.92	-19.06	257.79	90.6	Irumafimpa
GCDD0066	59742.61	29930.62	1216.93	-17.86	282.28	80.2	Irumafimpa
GCDD0067	59742.60	29930.61	1217.01	-14.95	282.09	85.8	Irumafimpa

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
GCDD0068	59740.61	29930.64	1218.27	10.93	235.52	50	Irumafimpa
GCDD0069	59740.76	29930.79	1217.12	-13.41	236.40	84.4	Irumafimpa
GCDD0070	59740.82	29930.80	1217.11	-13.54	235.80	73.7	Irumafimpa
GCDD0071	59618.90	29884.65	1249.65	-14.33	142.98	40.1	Irumafimpa
GCDD0072	59617.21	29890.61	1249.97	-10.43	122.77	37	Irumafimpa
GCDD0073	59621.46	29886.23	1248.89	-19.63	96.84	41.6	Irumafimpa
GCDD0074	59622.44	29885.05	1249.75	-12.78	75.03	40	Irumafimpa
GCDD0075	59824.73	29925.99	1220.98	3.83	237.40	84.5	Irumafimpa
GCDD0076	59825.44	29925.91	1220.38	-8.25	246.63	76.1	Irumafimpa
GCDD0077	59825.62	29926.27	1220.97	6.00	243.30	13.8	Irumafimpa
GCDD0077A	59825.62	29926.27	1220.97	6.00	243.30	80.4	Irumafimpa
GCDD0078	59826.29	29926.06	1220.61	-5.96	258.53	60.9	Irumafimpa
GCDD0079	59827.11	29926.02	1220.46	-9.01	272.38	65.8	Irumafimpa
1220N3GC0001	59850.63	29951.04	1219.26	-8.39	323.69	110.1	Irumafimpa
1220N3GC0002	59847.42	29951.82	1219.29	-19.32	309.96	93.7	Irumafimpa
GCDD0080	59827.97	29925.68	1220.33	-9.39	239.55	73.9	Irumafimpa
GCDD0081	59829.35	29926.44	1220.28	-8.06	308.87	68.4	Irumafimpa
1220N3GC0003	59848.71	29950.42	1219.75	8.53	311.30	103.8	Irumafimpa
1220N3GC0004	59850.89	29950.19	1219.57	0.19	323.78	121.9	Irumafimpa
GCDD0082	59829.34	29926.46	1220.29	-8.07	309.75	75.6	Irumafimpa
GCDD0083	59828.99	29927.61	1220.47	-5.83	318.11	84.3	Irumafimpa
1220N3GC0005	59850.94	29950.19	1219.83	7.09	319.86	127	Irumafimpa
1220N3GC0006	59851.36	29950.16	1221.48	33.51	329.80	88.8	Irumafimpa
GCDD0084	59826.29	29926.17	1221.03	5.33	259.12	65.8	Irumafimpa
1220N3GC0007	59848.69	29950.50	1220.76	32.74	312.20	80	Irumafimpa
GCDD0085	59827.73	29926.13	1221.04	6.33	282.10	64.5	Irumafimpa
GCDD0086	59824.15	29926.34	1221.06	4.81	227.78	67.1	Irumafimpa
1220N3GC0008	59841.59	29952.93	1218.49	-28.90	241.34	68	Irumafimpa
1220N3GC0009	59841.60	29952.92	1218.79	-14.67	241.97	49.4	Irumafimpa
1220N3GC0010	59845.63	29952.37	1218.72	-21.14	293.11	49	Irumafimpa
1220N3GC0011	59845.72	29952.29	1218.70	-20.92	292.18	71.1	Irumafimpa
1220N3GC0012	59841.80	29953.18	1220.13	21.64	242.49	62	Irumafimpa
1220N3GC0013	59843.91	29952.53	1219.76	13.43	267.64	35	Irumafimpa
GCDD0087	59824.15	29926.28	1221.07	5.09	227.57	96.7	Irumafimpa
GCDD0088	59824.39	29926.52	1221.65	19.32	227.92	91	Irumafimpa
1220N3GC0014	59843.89	29952.64	1220.87	34.45	267.21	57	Irumafimpa
1220N3GC0015	59845.65	29952.09	1219.51	4.90	292.37	44	Irumafimpa
1220N3GC0016	59846.11	29951.35	1221.02	28.65	339.11	88	Irumafimpa
1220N3GC0017	59851.29	29952.30	1219.21	-5.43	335.67	113.4	Irumafimpa
GCDD0089	59824.85	29926.29	1221.60	18.50	236.47	82.6	Irumafimpa
1220N3GC0018	59851.23	29952.34	1219.65	8.03	335.94	109.7	Irumafimpa
GCDD0090	59825.21	29925.49	1222.07	23.35	246.45	75.8	Irumafimpa

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
GCDD0091	59826.12	29925.04	1221.95	22.70	258.00	71	Irumafimpa
GCDD0092	59826.93	29929.49	1219.00	23.00	272.00	75	Irumafimpa
MB13GC0001	59632.60	29952.92	1116.86	5.23	274.09	83.6	Irumafimpa
MB13GC0002	59632.70	29952.81	1118.21	24.58	275.09	59.65	Irumafimpa

**Table 1C: Coordinates of significant intercepts K92 Mining Limited, Kora North Deposit:**

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
KMDD0008	59171.82	29971.22	1185.2424	34.46	247.30	165.6	Kora North
KMDD0009	59171.68	29971.12	1184.14	0.00	243.03	210.4	Kora North
KMDD0010	59171.58	29971.08	1183.4603	-35.78	240.39	235	Kora North
KMDD0011	59172.90	29970.96	1184.1892	0.93	270.87	109.8	Kora North
KMDD0012	59173.46	29971.01	1184.0891	0.01	278.37	106.9	Kora North
KMDD0013	59124.65	29876.51	1188.96	13.89	244.83	75.9	Kora North
KMDD0014	59125.79	29876.39	1188.79	9.45	270.00	61.7	Kora North
KMDD0014a	59125.82	29876.39	1188.87	12.55	270.76	17.1	Kora North
KMDD0015	59126.98	29876.38	1188.7	7.24	295.86	69.7	Kora North
KMDD0016	59123.70	29876.87	1189.61	25.5	224.9	68.9	Kora North
KMDD0017	59128.23	29876.47	1188.78	6.8	315.2	76.6	Kora North
KMDD0018	59124.65	29876.63	1189.94	30.62	243.59	73.0	Kora North
KMDD0019	59128.27	29876.49	1188.76	29.9	295.90	69.6	Kora North
KMDD0020	59127.04	29876.35	1188.71	23.9	315.10	93.6	Kora North
KMDD0021	59125.84	29876.27	1187.67	-14.4	271.90	67.8	Kora North
KMDD0022	59124.54	29876.48	1187.65	-15.62	243.01	75.4	Kora North
KMDD0023	59250.96	29924.86	1187.26	7.57	254.09	114.0	Kora North
KMDD0024	59123.63	29876.98	1190.06	40.29	223.78	99.8	Kora North
KMDD0025	59251.95	29924.72	1187.36	8.55	269.85	125.8	Kora North
KMDD0026	59125.78	29876.45	1189.62	35.30	275.19	76.5	Kora North
KMDD0027	59252.97	29925.18	1187.27	7.4	285.73	126.30	Kora North

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
KMDD0028	59125.80	29876.41	1190.56	49.3	270.00	105.10	Kora North
KMDD0029	59250.19	29925.36	1187.44	9.4	238.49	124.00	Kora North
KMDD0030	59125.71	29876.41	1187.36	-36.8	270.20	93.80	Kora North
KMDD0031	59250.07	29925.48	1187.37	8.6	227.30	97.60	Kora North
KMDD0032	59126.98	29876.56	1190.15	45.6	297.17	105.90	Kora North
KMDD0033	59440.08	29923.49	1216.28	-5.7	218.15	167.30	Kora North
KMDD0034	59127.16	29876.14	1187.82	-16.5	294.1	64.00	Kora North
KMDD0035	59440.27	29922.65	1216.22	-8.4	232.9	148.50	Kora North
KMDD0036	59127.07	29876.31	1187.46	-35.5	295.5	89.70	Kora North
KMDD0037	59003.52	29873.15	1189.54	8.2	270.7	90.50	Kora North
KMDD0038	59128.11	29876.71	1190.45	38.44	316.48	102.40	Kora North
KMDD0039	59001.47	29874.55	1189.46	8.68	243.76	108.90	Kora North
KMDD0040	59128.44	29876.20	1187.64	-12.62	313.64	61.80	Kora North
KMDD0041	59000.79	29876.12	1189.81	12.35	225.23	53.80	Kora North
KMDD0042	59124.63	29876.72	1190.39	46.20	241.41	80.00	Kora North
KMDD0043	59005.75	29874.46	1189.41	9.17	296.38	92.50	Kora North
KMDD0044	59124.60	29876.48	1187.33	-34.44	242.86	104.30	Kora North
KMDD0045	59006.42	29876.09	1190.49	25.4	314.5	121.0	Kora North
KMDD0046A	59123.71	29876.79	1187.25	-29.9	227.7	60.2	Kora North
KMDD0047	59000.62	29876.01	1188.28	-12.3	223.6	118.3	Kora North
KMDD0048	59128.02	29876.55	1187.41	-28.4	313.0	115.5	Kora North
KMDD0050	59361.95	29897.80	1206.41	-6.4	281.7	85.5	Kora North
KMDD0052	59361.92	29897.82	1205.47	-37.6	280.7	121.3	Kora North
KMDD0049	59000.70	29876.00	1190.69	24.7	223.9	104.9	Kora North
KMDD0054	59361.95	29897.71	1208.36	31.4	281.6	91.8	Kora North
KMDD0056	59361.39	29897.76	1206.92	3.8	255.3	82.7	Kora North

Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
KMDD0051	59001.62	29874.69	1191.00	31.7	243.8	102.0	Kora North
KMDD0058	59361.48	29898.08	1205.76	-38.1	254.7	126.7	Kora North
KMDD0060	59361.47	29897.83	1208.49	31.8	256.7	89.6	Kora North
KMDD0053	59001.55	29874.38	1188.44	-15.4	242.5	122.3	Kora North
KMDD0062	59361.45	29897.57	1207.49	14.4	257.7	84.1	Kora North
KMDD0064	59361.47	29898.11	1205.74	-22.0	254.3	104.0	Kora North
KMDD0055	59003.66	29874.17	1191.27	32.7	270.0	92.9	Kora North
KMDD0066	59361.38	29897.58	1207.54	14.6	229.3	91.4	Kora North
KMDD0057	59003.65	29873.45	1188.29	-15.7	269.8	101.8	Kora North
KMDD0068	59361.29	29897.82	1206.22	-22.2	277.8	110.0	Kora North
KMDD0059	59005.45	29874.72	1190.83	31.3	294.7	110.5	Kora North
KMDD0070	59362.80	29898.60	1206.58	-7.3	300.7	94.5	Kora North
KMDD0072	59363.21	29897.93	1208.07	25.5	301.6	114.0	Kora North
KMDD0074	59439.19	29894.28	1215.70	-9.98	253.2	78.5	Kora North
KMDD0087	59001.93	29876.38	1192.35	55.04	246.7	149.2	Kora North
KMDD0076	59439.43	29895.03	1218.10	28.12	252.9	107.9	Kora North
KMDD0078	59439.59	29895.65	1215.24	-37.2	251.4	130.5	Kora North
KMDD0080	59439.21	29894.14	1217.03	8.42	254.0	90.0	Kora North
KMDD0082	58903.06	29868.16	1191.07	18.57	291.0	89.9	Kora North
KMDD0084	58901.94	29868.29	1190.97	17.86	265.6	101.1	Kora North
KMDD0089	59001.45	29875.57	1187.33	-47.63	244.9	279.2	Kora North
KMDD0086	58901.12	29868.46	1190.97	14.26	245.9	179.2	Kora North
KMDD0088	58899.98	29868.71	1189.89	-3.26	221.8	150.6	Kora North
KMDD0090	58899.60	29868.47	1191.61	22.8	220.9	139.2	Kora North
KMDD0092	58900.26	29868.96	1189.49	-26.0	222.2	128.6	Kora North
KMDD0093	59001.18	29876.03	1191.58	41.2	196.8	203.0	Kora North



Hole_id	Collar location			Collar orientation		EOH depth (m)	Lode
	Local north	Local East	RL	Dip	Local azimuth		
KMDD0094	58900.50	29868.92	1192.66	43.0	228.5	114.4	Kora North
KMDD0095	59005.64	29877.17	1191.22	43.5	343.3	241.7	Kora North
KMDD0097	59004.54	29877.29	1192.34	65.5	315.2	171.8	Kora North
KMDD0096	58809.18	29854.04	1191.04	2.4	199.7	76.2	Kora North
KMDD0099	59005.07	29875.87	1187.67	-54.8	298.6	278.8	Kora North
KMDD0098	58901.22	29868.70	1189.40	-21.7	242.3	119.4	Kora North
KMDD0100	58903.77	29869.15	1188.89	-54.6	317.5	131.5	Kora North
KMDD0101	58815.00	29880.45	1196.00	58.4	218.5	221.5	Kora North
KMDD0102	58904.00	29868.97	1189.17	-31.0	317.8	150.1	Kora North
KMDD0104	58901.86	29868.91	1189.52	-37.0	265.0	122.0	Kora North
KMDD0106	58899.10	29868.53	1192.69	37.7	220.0	108.9	Kora North
KMDD0108	58899.68	29868.92	1190.66	10.5	220.0	130.6	Kora North
KMDD0110	58899.92	29869.07	1189.77	-15.8	221.7	111.2	Kora North
KMDD0110A	58899.92	29869.07	1189.77	-15.8	221.7	133.6	Kora North
KMDD0103	58815.18	29880.03	1191.47	-52.2	236.2	233.2	Kora North
KMDD0105	58821.39	29880.37	1196.01	60.0	279.2	192.2	Kora North

### 30 APPENDIX 2: SIGNIFICANT DRILL INTERSECTIONS

Table 2A: Significant intercepts K92 Mining Limited, Judd Vein system

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0001	22.5	22.68	0.15	7.33	2.87	1.10
KMDD0001	96.5	97	0.41	2.46	0.33	1.01
KMDD0002	78.8	79.6	0.78	3.24	3.97	2.53
KMDD0003	132	133	0.92	1.29	1.92	1.19
KMDD0003	153.2	153.4	0.18	1.77	0.18	0.32
KMDD0004	22.55	23	0.41	1.65	0.96	0.68
KMDD0004	114.5	115.5	0.91	1.65	0.2	1.50
KMDD0005	23.2	23.6	0.39	8.27	8.10	3.23
KMDD0005	79.8	81	1.18	3.07	5.10	3.62
KMDD0006	60.9	61.8	0.61	3.72	1.76	2.27
KMDD0007	89	90	0.67	1.01	0.48	0.68
KMDD0007	92	93	0.67	1.78	1.99	1.19
KMDD0007	96.9	97.1	0.14	1	1.43	0.14

Table 2B: Significant Intercepts K92 Mining Limited, Irumafimpa deposit:

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
GCDD0001	44	46.5	1.85	30.19	0.310	55.85
GCDD0001	49.1	50.1	0.74	6.10	0.081	4.51
GCDD0002	44.9	46	0.74	102.00	0.127	75.48
GCDD0002	50.1	50.6	0.34	9.21	0.023	3.13
GCDD0003	5.6	6.5	0.56	3.21	2.300	1.80
GCDD0004	13	14.2	0.61	4.39	0.027	2.68
GCDD0004	37.1	40.1	1.53	3.24	0.177	4.96
GCDD0005	41.8	43.5	1.357	1.88	0.040	2.55
GCDD0006	46	47	0.9	33.80	0.070	30.42
GCDD0007	29	31	1.92	5.64	0.110	10.83
GCDD0008	23.5	24.5	0.78	5.98	0.010	4.66
GCDD0008	45.1	46	0.63	13.20	0.020	8.32
GCDD0008	46	47	0.77	63.60	0.020	48.97
GCDD0009	24.7	25.5	0.78	7.99	0.290	6.23
GCDD0009	38.5	39.2	0.67	4.20	0.070	2.81
GCDD0011	44	45.5	1.11	73.16	0.230	81.21
GCDD0011	49.36	50.3	0.67	4.74	0.010	3.18
GCDD0011	53	54	0.78	5.44	0.060	4.24
GCDD0013	18.3	19.3	0.87	6.41	1.520	5.58
GCDD0013	34	35	0.91	11.40	0.050	10.37
GCDD0013	36	37	0.85	10.90	0.170	9.27
GCDD0014a	18.7	20.3	1.1	4.49	0.059	4.94
GCDD0015	21.9	23	0.89	19.70	0.023	17.53
GCDD0015	39	40.8	1.45	4.16	0.030	6.03
GCDD0016	50.5	53.2	1.77	28.75	0.038	50.89
GCDD0017	35	36	0.88	6.60	0.030	5.81
GCDD0017	40	41	0.88	43.94	0.042	38.67
GCDD0018	75.1	79.6	2.12	8.16	0.103	17.30
GCDD0019	70	72	1.76	32.32	0.001	56.88
GCDD0020	19.6	21	1.18	2.12	0.077	2.50
GCDD0020	27	29	1.64	22.60	0.063	37.06
GCDD0020	29.6	34.7	4.23	9.73	0.022	41.16

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
GCDD0020	40	44.2	2.66	6.03	0.108	16.04
GCDD0020	40	41	0.82	9.34	0.248	7.66
GCDD0020	41	42	0.84	5.56	0.031	4.67
GCDD0020	43	44.2	1	3.67	0.056	3.67
GCDD0020a	19.9	21	0.85	4.96	0.019	4.22
GCDD0020a	27	35.18	5.56	33.00	0.060	183.48
GCDD0020a	70	71	0.78	4.51	0.005	3.52
GCDD0021	43	44	0.86	4.66	0.010	4.01
GCDD0022	15.6	16.8	1.02	4.04	0.025	4.12
GCDD0022	23.2	28.7	4.88	10.42	0.040	50.85
GCDD0022	32.8	36.6	3.44	2.96	0.143	10.18
GCDD0022	41.8	47.5	5.254	1.58	0.091	8.30
GCDD0022	67	67.8	0.77	41.60	0.262	32.03
GCDD0022	70.6	71.8	1.16	2.65	0.057	3.07
GCDD0023	13.2	15.6	2.3	1.67	0.006	3.84
GCDD0023	21.5	26	4.31	16.48	0.038	71.03
GCDD0023	35.9	39	2.99	2.00	0.089	5.98
GCDD0025	25.3	33	6.76	1.64	0.000	11.09
GCDD0025	49	53	3.69	2.46	0.038	9.08
GCDD0025	67.5	70	2.38	15.80	0.203	37.60
GCDD0026	60	65	4.71	1.30	0.069	6.13
GCDD0027	66	69.3	3.01	10.89	0.033	32.78
GCDD0028	71	74	2.43	18.63	0.076	45.27
GCDD0028	77	80	2.43	19.82	0.135	48.16
GCDD0029	31.7	38.2	3.9	9.38	0.024	36.57
GCDD0029	43.6	44.6	0.61	9.41	0.163	5.74
GCDD0029	61.76	64	1.37	10.34	0.000	14.16
GCDD0030	75	77	1.65	1.89	0.093	3.12
GCDD0031	37.2	38.2	0.99	8.73	0.140	8.64
GCDD0031	48.37	50.7	2.27	2.62	0.140	5.94
GCDD0031	54	55.2	1.19	9.96	0.021	11.86
GCDD0031	73	77	3.96	2.88	0.653	11.39
GCDD0032	42	45	2.75	5.73	0.068	15.76
GCDD0032	82.4	84.8	2.21	2.24	0.718	4.94
GCDD0032	86.1	89	2.67	3.74	0.427	9.98
GCDD0033	31	32	0.75	3.85	0.924	2.89
GCDD0034	34	35	0.76	1.46	0.895	0.79
GCDD0035	51.65	52.13	0.44	6.90	0.070	3.04
GCDD0036	27	28	0.81	4.72	0.100	3.82
GCDD0036	37	38	0.81	6.96	0.090	5.64
GCDD0036	82	85	1.62	23.10	0.040	37.42
GCDD0037	70	72	1.54	2.38	0.294	3.67
GCDD0037	88	89	0.77	6.69	0.030	5.15
GCDD0038	39	44	2.26	5.95	0.031	13.45
GCDD0038	52	54	1.1	2.91	0.964	3.20
GCDD0039	26.3	29.4	2.48	3.03	0.019	7.51
GCDD0039	34	35	0.8	14.46	0.010	11.57
GCDD0039	53	54	0.8	4.87	0.020	3.90
GCDD0039	55	56	0.8	3.30	0.040	2.64
GCDD0040	40	40.65	0.49	5.91	0.132	2.90
GCDD0040	54	54.6	0.46	33.56	0.029	15.44
GCDD0041	76.15	77	0.63	5.53	0.118	3.48

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
GCDD0041	81.74	82.5	0.56	10.54	0.035	5.90
GCDD0041	120	122	1.47	1.97	0.006	2.89
GCDD0041	124.6 3	125.8	0.89	3.87	0.132	3.44
GCDD0042	49.2	49.5	0.21	17.28	0.108	3.63
GCDD0042	82	82.7	0.495	7.84	0.028	3.88
GCDD0042	133.9	134.8	0.65	4.80	0.202	3.12
GCDD0043	54.4	55	0.43	6.05	0.140	2.60
GCDD0043	78.5	79.3	5.8	6.51	0.020	37.76
GCDD0043	93	94	0.73	3.66	0.030	2.67
GCDD0043	124.4	126	1.19	3.51	0.110	4.18
GCDD0043	129.1	130.8	1.27	4.91	0.110	6.24
GCDD0044	96.7	98.4 5	1.24	4.59	0.020	5.69
GCDD0045	79.8	83.6	2.41	28.00	0.067	67.47
GCDD0045	92.7	94.9	1.38	2.78	0.035	3.84
GCDD0046	35	36.4	1.37	174.53	0.104	239.11
GCDD0046	48.2	48.9	0.68	11.80	0.520	8.02
GCDD0046	53.5	56.7	3.1	6.81	0.025	21.10
GCDD0046	67.4	68	0.58	8.30	0.050	4.81
GCDD0046	70.7	71.5	0.77	6.37	0.260	4.90
GCDD0047	62.7	63.2	0.334	3.34	0.040	1.1
GCDD0047	95.2	95.7	0.334	2.44	0.010	0.8
GCDD0047	103.4	103.8	0.27	2.70	0.720	0.7
GCDD0048	41.2	43	1.64	9.20	0.020	15.09
GCDD0048	56.1	56.8	0.65	9.48	0.550	6.16
GCDD0048	78.5	79.5	0.94	4.44	0.090	4.17
GCDD0048	80.26	82.5	1.78	2.75	0.770	4.90
GCDD0048	83.5	84.3	0.75	6.28	0.140	4.71
GCDD0049	29.24	31.7 5	2.50	2.23	0.088	5.57
GCDD0050	97.4	98.4	0.74	8.76	0.123	6.48
GCDD0051	56.7	56.9	0.19	1.74	0.010	bd
GCDD0052	82.45	85.2	2.03	21.27	0.025	43.18
GCDD0053	74.7	79	3.40	27.94	0.020	95.00
GCDD0054	31.2	32.7	0.98	4.45	0.140	4.36
GCDD0054	61	63.9	2.42	5.43	0.173	13.13
GCDD0054	65.9	67	0.92	3.72	0.055	3.42
GCDD0055	39.7	40.4	0.62	63.72	0.020	39.51
GCDD0056	73.2	74	0.64	30.76	0.160	19.69
GCDD056	82	83.6 5	1.31	10.57	0.020	13.85
GCDD0057	75	75.8	0.63	10.06	0.040	6.34
GCDD0058	47	47.7	0.57	9.15	0.140	5.22
GCDD0059	80.6	82.2	1.21	4.07	0.020	4.92
GCDD0059	84.2	85.5	0.99	22.20	0.010	21.98
GCDD0060	31	31.6	0.68	0.86	0.020	0.5848
GCDD0061	35.9	36.7	0.60	1.72	0.170	1.032
GCDD0062	36.94	41.9	3.12	5.96	0.090	18.58
GCDD0063	39	47	4.48	4.25	0.644	19.04
GCDD0063	64	69.2 9	3.89	2.77	0.530	10.78
GCDD0064	32.2	36.9	2.64	2.39	0.600	6.31

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
GCDD0065	15.5	16	0.46	2.84	0.290	1.31
GCDD0065	35.4	36	0.54	17.68	0.060	9.55
GCDD0065	42.2	42.7	0.45	3.23	0.020	1.45
GCDD0066	29	29.7	0.66	2.43	0.010	1.60
GCDD0066	72	74.1	1.97	3.55	0.100	6.99
GCDD0067	72.2	72.6	0.35	7.97	0.077	2.79
GCDD0068	41	42.4 5	0.74	2.24	0.020	1.66
GCDD0069	18.32	18.9	0.56	4.02	0.100	2.25
GCDD0069	48	48.3	0.27	6.55	0.019	1.77
GCDD0069	51.2	51.9	0.68	3.97	0.038	2.70
GCDD0070	65	66	0.95	10.24	0.020	9.73
GCDD0071	3.7	7.4	3.91	60.29	0.070	235.75
GCDD0071	11.4	11.7	0.29	14.22	0.106	4.12
GCDD0072	0	2.1	1.75	1.40	0.030	2.45
GCDD0073	2	4.7	2.60	7.39	0.016	19.20
GCDD0074	4.8	13	8.00	24.53	0.055	196.25
GCDD0074	14.5	17.7	3.00	4.52	0.150	13.56
GCDD0075	27.8	29.5	1.34	2.89	0.030	3.88
GCDD0075	64.7	66.7	1.58	1.85	0.587	2.92
GCDD0075	76.6	77.1	0.40	6.40	4.110	2.53
GCDD0076	24.9	26.6	1.46	1.43	0.030	2.08
GCDD0076	56.6	57	0.34	1.39	0.587	0.48
GCDD0076	59	60	0.86	2.01	4.110	1.72
GCDD0077	22.7	23	0.27	2.66	0.074	0.72
GCDD0077	23.87	24.7 5	0.85	2.61	0.011	2.22
GCDD0077	29.7	31	1.27	2.55	0.023	3.24
GCDD0077	33	33.9	0.88	47.00	0.008	41.36
GCDD0077	54.4	58	3.55	3.39	0.318	12.05
GCDD0078	24.35	24.6	0.20	5.32	0.03	1.06
GCDD0078	26.3	27.1	0.75	2.80	0.00	2.10
GCDD0078	30.05	30.4	0.30	6.81	0.40	2.04
GCDD0078	33.65	34	0.30	10.46	0.02	3.14
GCDD0078	47.8	52.2	4.30	5.39	0.05	23.19
1220N3GC000 1	17.05	17.3	0.22	2.05	2.40	0.45
1220N3GC000 1	25	26.4	1.30	2.11	1.24	2.74
1220N3GC000 1	69.3	69.6	0.27	2.07	0.01	0.56
1220N3GC000 1	89	89.4	0.37	2.38	0.02	0.88
1220N3GC000 1	96.1	97	0.88	6.02	0.03	5.30
GCDD0079	28.2	30.5	2.20	1.74	0.12	3.82
1220N3GC000 2	21.7	22.8	1.00	4.76	0.31	4.76
1220N3GC000 2	33.5	36.7	3.00	1.50	0.46	4.50
1220N3GC000 2	61	62	0.90	18.15	0.08	16.34
1220N3GC000 2	82.8	83.2	0.37	1.48	0.29	0.55
GCDD0080	25	26	0.88	7.15	0.17	6.29
GCDD0080	28.1	28.3	0.18	5.86	0.03	1.05

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
GCDD0080	47.5	47.8 5	0.30	4.50	0.02	1.35
GCDD0081	46.7	48	1.15	0.67	0.03	0.77
1220N3GC000 3	20.9	23.3 7	1.96	4.64	0.26	9.07
1220N3GC000 3	31.8	32.2	0.30	2.88	0.66	0.86
1220N3GC000 3	58	58.7	0.56	3.73	0.04	2.07
1220N3GC000 3	84.4	84.8	0.30	2.68	0.28	0.80
1220N3GC000 4	68.9	69.5	0.40	2.21	0.01	0.88
1220N3GC000 4	78	79	0.67	4.20	0.00	2.80
1220N3GC000 4	85.9	86.6	0.47	2.51	0.01	1.18
GCDD0082	27	28.3 5	1.30	2.42	0.18	3.15
GCDD0082	31	34	2.70	3.95	0.03	10.67
GCDD0082	36.8	37.4	0.90	3.68	0.09	3.31
1220N3GC000 5	23.8	26.0 7	1.47	3.76	1.18	5.53
1220N3GC000 5	108.5 1	109. 2	0.46	2.24	3.01	1.03
1220N3GC000 5	110.9	111. 1	0.13	3.72	7.38	0.48
1220N3GC000 6	34.27	34.8	0.38	5.92	0.38	2.25
1220N3GC000 6	69.9	70.8	0.70	4.04	0.03	2.83
1220N3GC000 6	79.4	80.5	0.90	4.93	0.15	4.44
GCDD0084	27	30	2.00	3.01	0.02	6.02
GCDD0084	43.3	44.4	0.93	2.61	0.10	2.43
GCDD0085	22.4	23.4	0.80	3.34	0.01	2.67
GCDD0085	28	29	0.82	3.93	0.04	3.22
GCDD0085	39.65	40.9	1.00	7.93	0.20	7.93
including	40.15	40.9	0.74	11.27	0.32	8.34
GCDD0085	47.4	49.2	1.40	4.66	0.34	6.53
1220N3GC000 7	28	32.3	3.50	2.08	1.62	7.30
1220N3GC000 7	58.1	59.7	1.40	5.49	0.04	7.69
1220N3GC000 7	62.9	63.5	0.48	28.26	0.03	13.56
1220N3GC000 7	68	69	0.77	5.60	0.05	4.31
1220N3GC000 7	74.5	77.8	2.90	2.09	0.12	6.07
1220N3GC000 8	32.65	33.1	0.34	2.12	0.26	0.72
1220N3GC000 9	27	27.3	0.25	1.73	5.80	0.43
1220N3GC001 0	26.7	29	2.15	2.20	0.19	4.73
1220N3GC001 1	21.85	22.5	0.58	2.69	0.82	1.56
1220N3GC001 1	30	32.4	2.13	3.87	0.27	8.24

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
1220N3GC001 1	34.18	34.5	0.28	7.83	0.36	2.19
1220N3GC001 1	54.4	55	0.54	2.46	0.11	1.33
1220N3GC001 2	59.1	60	0.73	5.25	0.06	3.83
1220N3GC001 3	22.53	25.7	3.10	2.04	1.60	6.32
1220N3GC001 3	27.27	27.8 3	0.54	2.85	1.69	1.54
GCDD0086	20.7	24	2.76	6.14	0.07	16.95
GCDD0087	30.67	31.4 4	0.54	5.26	0.21	2.84
GCDD0087	48.25	50.3	1.44	2.82	0.02	4.06
1220N3GC001 4	29.64	31.6 5	1.58	2.70	0.71	4.27
1220N3GC001 4	33.6	35.7	1.73	2.96	0.42	5.12
1220N3GC001 4	50	56.8 4	5.61	1.15	0.10	6.45
1220N3GC001 5	13.75	14.1	0.33	4.22	0.41	1.39
1220N3GC001 5	20.8	22.4	1.52	12.86	1.42	19.55
1220N3GC001 6	24.84	29.7 3	4.10	2.10	0.65	8.61
1220N3GC001 6	37.34	38.1	0.63	2.70	0.77	1.70
1220N3GC001 6	49.6	54	3.67	1.67	0.06	6.13
1220N3GC001 6	57.8	60.1 5	1.96	1.18	0.01	2.31
1220N3GC001 6	83.3	85.8 4	2.12	2.56	0.27	5.43
1220N3GC001 7	34.6	37.5 4	1.40	81.68	0.32	114.35
GCDD0088	30.72	32	0.85	2.35	0.24	2.00
GCDD0088	39.8	40.4	0.39	24.39	0.26	9.51
GCDD0088	64	65	0.67	8.31	0.03	5.57
GCDD0089	29.32	29.5 4	0.17	2.94	0.02	0.50
GCDD0089	38.5	40.6	1.62	3.27	0.05	5.30
1220N3GC001 8	65.56	66.6	0.80	2.49	0.09	1.99
1220N3GC001 8	68	68.3	0.22	3.68	0.15	0.81
1220N3GC001 8	97.37	98	0.55	6.23	0.05	3.43
GCDD0090	26.1	26.6	0.42	9.88	0.04	4.17
GCDD0090	35	36.3 2	1.11	5.20	0.06	5.79
GCDD0091	22.8	25.7	2.62	9.26	0.15	24.25
GCDD0091	27.7	29.2 5	1.40	9.91	0.02	13.86
GCDD0091	31.6	33	1.26	14.37	0.10	18.16
GCDD0091	42.5	43	0.45	9.68	0.04	4.37
GCDD0091	58	59	0.90	5.79	0.01	5.22
GCDD0092	22.18	22.5 8	0.39	12.10	0.28	4.77
GCDD0092	28	29.4	1.38	4.75	0.01	6.56

Hole_id	From (m)	To (m)	Interval width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
MB13GC0001	74.2	74.9	0.70	0.88	0.51	0.62
MB13GC0002	9	10	0.88	1.52	0.06	1.34

Table 2C: Significant Intercepts K92 Mining Limited, Kora North Deposit

Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0009	117.80	122.00	3.74	0.80	0.52	3.0
KMDD0009	154.10	159.50	4.81	11.68	1.33	56.2
KMDD0010	138.45	141.10	2.17	4.60	0.23	10.0
KMDD0010	143.10	148.10	4.10	4.38	0.28	18.0
KMDD0010	229.85	230.00	0.12	3.92	2.44	0.5
KMDD0011	99.10	100.10	1.00	3.00	0.05	3.0
KMDD0011	102.00	104.66	5.46	1.83	0.06	10.0
KMDD0011	107.00	109.80	2.80	2.47	0.05	6.9
KMDD0012	103.40	106.00	2.60	2.90	0.15	7.5
KMDD0013	15.80	16.25	0.41	3.34	0.06	1.4
KMDD0013	18.10	19.10	0.91	1.27	0.02	1.2
KMDD0013	52.35	53.65	1.18	13.86	1.68	16.4
KMDD0014	13.20	13.53	0.33	2.24	0.10	0.7
KMDD0014	45.80	47.65	1.83	2.61	0.84	4.8
KMDD0014 a	13.75	15.00	1.24	2.63	0.05	3.3
KMDD0015	14.00	15.00	0.92	1.40	1.67	1.3
KMDD0015	50.25	54.7	4.12	9.28	0.52	38.2
KMDD0016	22.3	27	4.24	1.20	0.10	5.1
KMDD0016	64.9	68.3	3.34	9.94	5.97	33.2
KMDD0017	16.9	18.9	1.4	1.52	0.20	2.1
KMDD0017	63.3	65.8	1.8	68.78	0.37	121.1
KMDD0018	17.4	19.5	1.99	1.52	0.20	3.0
KMDD0018	53.2	55.4	2.03	1.30	0.29	3.6
KMDD0019	15.1	18.0	2.41	1.16	0.39	4.4
KMDD0019	55.3	56.6	1.04	5.37	0.38	6.2
KMDD0020	18.6	21.3	2.22	5.47	0.02	12.3
KMDD0021	12.5	14.2	1.57	3.81	0.23	6.9
KMDD0021	51.6	54.0	2.18	12.89	1.19	32.4
KMDD0022	14.6	18.4	3.30	5.45	0.22	19.4
KMDD0022	62.0	65.4	2.95	11.76	2.84	48.3
KMDD0024	28	39.5	7.56	7.11	0.32	53.8
KMDD0024	71.4	77.35	3.78	5.23	1.97	19.8
KMDD0025	46.6	46.9	0.29	6.86	0.07	2.0
KMDD0025	52.2	55.4	3.06	1.68	0.02	5.2
KMDD0025	61	61.2	0.19	0.35	2.73	0.1
KMDD0025	94.8	95.3	0.48	0.37	2.02	0.2
KMDD0025	121.8	122.5	0.67	0.64	1.93	0.4
KMDD0026	15.44	17.7	1.55	1.32	0.21	2.0
KMDD0026	52.8	54.63	1.49	3.94	0.11	5.9
KMDD0027	45.47	45.88	0.40	15.43	0.08	6.1
KMDD0027	53.05	57.03	3.84	4.05	0.05	15.6
KMDD0027	86.51	86.8	0.28	5.53	0.02	1.5
KMDD0028	19.7	26.5	3.66	4.20	0.02	15.4
KMDD0028	65.6	66.3	0.45	8.17	0.29	3.6
KMDD0029	56.6	57.4	0.68	1.46	0.11	1.0
KMDD0029	65.3	65.8	0.46	5.18	0.02	2.4
KMDD0029	109.15	110.25	0.94	2.22	0.22	2.1



Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0030	14	17.4	1.88	3.18	0.34	6.0
KMDD0030	73	74.2	0.39	3.82	0.31	1.5
KMDD0030	79.2	79.7	0.28	3.45	2.56	1.0
KMDD0031	65.5	65.8	0.23	1.97	2.56	0.5
KMDD0031	71.4	77	4.33	6.17	0.10	26.7
KMDD0032	66.4	68.6	1.43	8.905	1.09	12.7
KMDD0033	39	39.5	0.30	0.86	3.20	0.3
KMDD0033	51	52	0.60	3.03	0.02	1.8
KMDD0033	65.45	68.1	1.58	1.07	0.13	1.7
KMDD0033	71	72.3	0.78	3.25	0.27	2.5
KMDD0033	147	148.8	1.07	2.35	0.21	2.5
KMDD0034	14	18.1	3.15	9.19	0.02	29.0
KMDD0034	55.6	59.2	2.77	36.06	0.66	99.8
KMDD0035	16.3	16.8	0.34	0.33	0.25	0.1
KMDD0035	31.8	32.8	0.69	1.09	0.44	0.7
KMDD0035	40.3	40.6	0.21	1.72	0.78	0.4
KMDD0035	52.7	54.9	1.51	2.09	0.05	3.2
KMDD0035	116.85	117.95	0.75	1.69	0.28	1.3
KMDD0035	118.1	122.9	3.29	4.43	0.27	14.6
KMDD0036	75.9	76.26	0.26	1.04	0.01	0.3
KMDD0036	78.85	80.38	1.11	2.76	2.26	3.1
KMDD0037	17.4	25.85	7.24	4.81	0.34	34.8
KMDD0037	57.25	65.15	7.57	6.61	0.85	50.1
KMDD0039	24.65	28.7	3.66	5.00	0.22	18.3
KMDD0039	43	46.6	3.25	12.99	0.92	42.3
KMDD0039	72	74.6	2.35	4.91	0.80	11.5
KMDD0040	15.7	20	2.98	1.32	0.05	3.9
KMDD0041	38.1	45.65	4.98	7.16	0.14	35.6
KMDD0042	21	21.4	0.25	1.02	2.50	0.2
KMDD0042	23.5	26.1	1.59	3.74	0.16	6.0
KMDD0042	62.7	63.8	0.67	1.20	0.11	0.8
KMDD0043	21.1	28.8	6.95	5.84	0.14	40.6
KMDD0043	59.4	61.2	1.67	2.81	3.92	4.7
KMDD0043	66	76.1	9.4	3.70	0.24	34.7
KMDD0044	15	19.42	2.30	3.30	0.05	7.6
KMDD0044	88.5	92.4	2.03	1.04	2.45	2.1
KMDD0045	31	36.26	3.61	13.77	0.07	49.7
KMDD0045	44.4	45.1	0.48	2.71	1.02	1.3
KMDD0045	65.64	69.3	2.97	0.91	0.29	2.7
KMDD0045	99	100	0.81	1.56	1.19	1.3
KMDD0046 A	17.07	18.12	0.66	3.16	0.01	2.1
KMDD0046 A	20.13	24.1	2.49	1.68	0.47	4.2
KMDD0047	40.5	44.35	2.18	2.83	1.01	6.2
KMDD0047	48.16	54.65	4.43	23.66	0.16	104.8
KMDD0047	57.8	58	0.11	1.46	1.54	0.2
KMDD0047	83.5	85.6	1.69	9.42	3.47	15.9
KMDD0047	110.6	114.7	3.30	2.36	1.09	7.8
KMDD0047	115.7	116.4	0.56	1.44	0.60	0.8
KMDD0047	117.7	118.3	0.48	1.05	0.03	0.5
KMDD0048	14.9	21.5	4.07	3.42	0.06	13.9
KMDD0048	83.9	86.4	1.20	2.70	3.06	3.2
KMDD0049	40.55	44	2.02	1.37	0.41	2.8
KMDD0049	44.5	50.1	3.27	40.81	0.46	133.6

Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0049	76.7	79.5	1.96	7.86	3.29	15.4
KMDD0049	88.8	90	0.84	1.46	1.20	1.2
KMDD0049	91.9	98.7	4.75	53.34	1.16	253.3
KMDD0050	19.75	22.15	4.88	2.74	0.23	13.4
KMDD0050	28.55	29	0.44	0.39	3.04	0.2
KMDD0050	32.3	32.55	0.24	4.49	2.48	1.1
KMDD0050	73.4	75.2	1.75	3.50	0.15	6.1
KMDD0051	27.5	28.8	1.20	2.38	0.50	2.9
KMDD0051	34.5	36	1.39	3.05	0.13	4.2
KMDD0051	51.8	54	1.51	1.13	0.36	1.7
KMDD0051	60	61.4	1.21	6.23	1.02	7.6
KMDD0051	69	72.4	2.95	16.84	1.35	49.6
KMDD0052	24.54	31.1	3.55	2.59	0.17	9.2
KMDD0052	40.55	43	1.65	0.32	0.06	0.5
KMDD0052	100.3	102.35	1.33	0.77	0.50	1.0
KMDD0053	26.4	28	1.81	0.56	0.44	1.0
KMDD0053	34.5	35.1	0.58	15.55	0.03	9.1
KMDD0053	83.9	90.7	5.90	0.86	0.64	5.1
KMDD0053	103.8	106.2	2.08	0.98	1.27	2.0
KMDD0054	24.1	28.9	3.80	0.31	0.64	1.2
KMDD0054	69.8	70.5	0.70	27.84	0.21	19.5
KMDD0054	80	80.8	0.76	21.49	0.24	16.4
KMDD0055	21	21.4	0.35	2.61	0.07	0.9
KMDD0055	25.2	29.25	3.56	4.28	0.89	15.2
KMDD0055	42.3	45.5	3.20	9.83	0.33	31.4
KMDD0055	56.3	60.8	4.37	4.68	2.33	20.4
KMDD0055	63	63.4	0.39	3.26	0.26	1.3
KMDD0056	19.5	20.9	1.32	2.11	0.59	2.8
KMDD0056	22.8	26.3	3.31	0.40	0.07	1.3
KMDD0056	28.8	30.3	1.42	0.63	0.29	0.9
KMDD0056	69.35	72.6	3.02	2.84	0.33	8.6
KMDD0057	20.75	27.7	6.43	13.78	0.03	88.6
KMDD0057	76.75	79.4	2.27	14.51	2.58	32.9
KMDD0058	26.82	30	2.48	3.52	0.60	8.7
KMDD0058	103	105.4	1.58	6.71	0.16	10.6
KMDD0059	21.1	30.2	7.82	6.64	0.39	51.9
KMDD0059	40.3	41.1	0.75	7.02	0.68	5.3
KMDD0059	60.9	65.6	4.47	1.03	0.39	4.6
KMDD0059	83.2	83.4	0.19	0.74	3.26	0.1
KMDD0060	14.07	14.37	0.29	11.06	0.12	3.2
KMDD0060	18.35	18.55	0.19	2.08	0.05	0.4
KMDD0060	26.2	28	1.74	2.65	0.13	4.6
KMDD0060	35.77	37.8	1.84	0.96	1.02	1.8
KMDD0060	68.8	69	0.18	1.93	1.19	0.3
KMDD0060	71.05	71.9	0.77	0.98	0.89	0.8
KMDD0062	18.31	19.12	0.78	1.60	0.16	1.2
KMDD0062	20.76	24.33	3.44	1.56	0.16	5.4
KMDD0062	26	29	2.89	1.01	0.23	2.9
KMDD0062	31.2	32.52	1.27	1.28	1.37	1.6
KMDD0062	35.17	35.45	0.27	2.51	0.51	0.7
KMDD0062	66.9	67.32	0.42	11.05	0.84	4.6
KMDD0062	78.96	80.1	1.13	2.71	0.19	3.1
KMDD0064	25.53	27.5	1.56	2.36	0.09	3.7
KMDD0064	38.07	40.4	1.85	0.72	0.72	1.3

Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0064	87.19	88.6	1.15	10.37	0.20	11.9
KMDD0066	23.4	30	6.14	0.31	0.31	1.9
KMDD0066	74	76.1	2.05	0.43	0.14	0.9
KMDD0068	21.15	21.9	0.71	1.38	0.09	1.0
KMDD0068	23.4	24.85	1.38	3.70	0.15	5.1
KMDD0068	35.6	36.4	0.76	0.97	1.02	0.7
KMDD0068	83.1	84.9	1.41	0.96	1.13	1.4
KMDD0070	21.6	26.1	4.08	2.13	0.12	8.7
KMDD0070	34.6	34.8	0.22	1.78	3.79	0.4
KMDD0070	82.8	83.5	0.51	7.75	0.12	3.9
KMDD0072	38.2	39.0	0.62	0.35	1.53	0.2
KMDD0072	81.5	83.2	1.34	1.96	0.20	2.6
KMDD0074	5.6	6.6	0.95	1.12	0.99	1.1
KMDD0074	13.9	14.3	0.38	1.66	0.83	0.6
KMDD0074	17.1	18.1	0.95	0.44	1.05	0.4
KMDD0074	70.1	71.5	0.96	4.33	0.14	4.2
KMDD0076	19.55	20.6	0.96	3.31	0.13	3.2
KMDD0076	23.3	23.6	0.27	1.43	0.06	0.4
KMDD0076	24.8	26.8	1.83	1.30	1.08	2.4
KMDD0076	70.54	72.88	2.05	129.77	0.06	266.0
KMDD0078	0	0.8	0.52	11.91	0.07	6.2
KMDD0078	0.8	1.35	0.36	1.04	0.02	0.4
KMDD0078	6	6.9	0.59	1.61	2.48	1.0
KMDD0078	13.5	15.75	1.48	1.12	0.09	1.7
KMDD0078	48	48.55	0.36	1.44	0.51	0.5
KMDD0078	86.74	88	0.74	1.20	0.10	0.9
KMDD0078	96	98.4	1.41	1.76	0.21	2.5
KMDD0080	4.83	5.13	0.29	1.40	0.74	0.4
KMDD0080	12.4	12.74	0.33	1.88	0.02	0.6
KMDD0080	13.44	16.56	3.01	2.46	0.07	7.4
KMDD0080	61.89	62.13	0.23	5.49	0.04	1.3
KMDD0080	64.28	65.31	0.99	4.69	0.58	4.7
KMDD0080	68.2	70.51	2.23	1.55	0.03	3.5
KMDD0080	79.1	79.52	0.41	1.26	0.00	0.5
KMDD0080	88.71	90	1.25	2.72	1.34	3.4
KMDD0082	35.55	38.3	2.67	21.41	1.13	57.2
KMDD0082	38.45	40.48	1.97	3.74	0.02	7.4
KMDD0082	42.14	43.67	1.49	1.23	0.06	1.8
KMDD0082	46.09	49.4	2.62	8.37	0.39	21.9
KMDD0082	64.88	68.66	3.59	32.54	2.59	116.7
KMDD0082	75.39	75.65	0.25	0.51	1.33	0.1
KMDD0084	38.5	43.18	4.14	73.54	0.33	304.5
KMDD0084	48.3	54.12	5.46	486.78	0.16	2658.3
KMDD0084	62	66.12	4.00	7.59	1.92	30.4
KMDD0084	86.65	87.24	0.57	1.25	0.86	0.7
KMDD0086	43.9	44.35	0.35	1.45	0.83	0.50
KMDD0086	47.4	51.6	3.23	116.43	0.36	375.50
KMDD0086	52.6	55.0	1.84	22.41	0.88	41.29
KMDD0086	55.6	57.8	1.65	11.49	0.60	18.97
KMDD0086	58.5	59.4	0.69	1.41	0.22	0.97
KMDD0086	65.0	70.9	5.03	9.81	3.00	49.37
KMDD0086	73.0	74.0	0.85	1.74	0.78	1.48
KMDD0086	76.0	82.0	4.69	2.39	0.19	11.21
KMDD0086	148.5	149.3	0.67	1.25	2.33	0.83

Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0087	46.5	49.4	1.56	53.39	0.13	83.5
KMDD0087	51.1	52.0	0.52	30.49	0.07	15.7
KMDD0087	81.3	85.0	2.45	6.94	0.56	17.0
KMDD0087	89.1	90.2	0.73	10.79	2.83	7.8
KMDD0087	92.6	92.8	0.13	1.88	2.54	0.2
KMDD0087	46.5	49.35	1.56	53.39	0.13	83.5
KMDD0087	51.06	52	0.52	30.49	0.07	15.7
KMDD0087	81.3	85	2.45	6.94	0.56	17.0
KMDD0087	89.1	90.2	0.73	10.79	2.83	7.8
KMDD0087	92.6	92.8	0.13	1.88	2.54	0.2
KMDD0088	76.87	78.04	0.81	1.31	0.28	1.06
KMDD0088	79.79	80.4	0.42	1.21	0.14	0.51
KMDD0088	81.54	85	2.40	5.35	0.34	12.82
KMDD0088	89.3	90.1	0.55	10.32	0.69	5.72
KMDD0088	96.31	108.95	8.31	8.34	2.10	69.27
KMDD0088	109.78	110.15	0.24	1.04	0.69	0.25
KMDD0088	111.1	111.56	0.30	1.30	0.08	0.39
KMDD0088	113.05	115.31	1.49	1.80	0.47	2.68
KMDD0088	119.14	120.87	1.14	1.15	0.52	1.30
KMDD0088	122.21	124.36	1.41	12.50	2.85	17.66
KMDD0089	52.6	59.2	2.78	10.70	0.14	29.7
KMDD0089	65	66.6	1.23	1.08	0.73	1.3
KMDD0089	77.8	78.8	0.71	0.59	3.20	0.4
KMDD0089	116	117	0.88	1.06	0.21	0.9
KMDD0089	138	140	1.20	3.95	0.37	4.7
KMDD0089	261	261.6	0.57	5.34	0.81	3.0
KMDD0090	70.00	71.00	0.50	0.04	0.03	0.02
KMDD0090	71.00	72.00	0.50	0.08	0.06	0.04
KMDD0090	72.00	73.00	0.50	0.04	0.02	0.02
KMDD0090	74.00	81.72	3.85	25.60	0.45	98.55
KMDD0090	81.72	82.22	0.25	1.12	0.14	0.28
KMDD0090	82.22	82.50	0.14	4.18	0.03	0.58
KMDD0090	82.50	82.90	0.20	8.35	0.04	1.67
KMDD0090	83.20	88.80	2.79	1.42	0.15	3.97
KMDD0090	89.73	90.73	0.50	1.15	0.08	0.57
KMDD0090	91.00	102.00	5.48	10.46	0.43	57.39
KMDD0090	105.00	114.35	6.85	11.70	3.59	80.16
KMDD0091	73.5	76.1	1.01	24.42	0.06	24.76
KMDD0091	81.1	89.5	3.19	4.18	0.35	13.33
KMDD0091	111	130	7.41	1.44	0.17	10.65
KMDD0091	144	145	0.40	1.17	2.85	0.47
KMDD0092	90.31	91.91	0.68	8.98	0.29	6.10
KMDD0092	95.95	96.72	0.33	1.58	1.41	0.52
KMDD0092	97.34	98	0.28	1.51	0.68	0.42
KMDD0092	125.2	128.6	1.72	23.57	0.17	40.56
KMDD0093	177	199.2	6.22	61.81	0.27	384.20
KMDD0094	70.15	71	0.52	19.81	0.37	10.22
KMDD0094	73.57	76.7	1.90	12.87	0.09	24.44
KMDD0094	88.6	92.69	2.48	2.34	0.60	5.81
KMDD0095	81	96.1	9.82	1.99	0.18	19.50
KMDD0095	161.1	171.8	4.17	44.02	0.27	183.70
KMDD0095	219.6	221.3	1.19	2.25	1.32	2.68
KMDD0096	29.00	30.00	0.87	3.00	0.01	2.60
KMDD0096	32.34	32.60	0.23	0.80	3.34	0.18

Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
KMDD0096	36.82	37.80	0.85	1.00	0.00	0.85
KMDD0096	37.80	38.88	0.94	1.00	0.02	0.94
KMDD0096	39.85	40.85	0.87	1.00	0.02	0.87
KMDD0096	41.43	43.20	1.54	2.26	2.33	3.47
KMDD0096	43.20	44.50	1.13	0.08	0.29	0.09
KMDD0096	44.50	45.55	0.91	0.03	0.03	0.03
KMDD0096	46.25	47.95	1.48	1.43	0.26	2.11
KMDD0096	49.00	50.00	0.87	1.00	0.03	0.87
KMDD0096	51.00	52.00	0.87	1.00	0.00	0.87
KMDD0096	59.90	60.70	0.69	3.03	0.42	2.10
KMDD0096	64.13	68.95	4.10	10.83	0.78	44.37
KMDD0096	68.95	69.16	0.18	0.18	0.08	0.03
KMDD0096	69.36	75.15	4.92	1.48	1.38	7.28
KMDD0097	66.5	70.65	1.58	20.83	0.20	32.90
KMDD0097	76.25	84.5	3.14	5.91	0.49	18.58
KMDD0097	114.8	116.8	0.72	3.01	1.91	2.15
KMDD0097	107.3	108.24	0.34	2.07	1.12	0.70
KMDD0097	120.4	121.4	0.36	6.23	0.39	2.23
KMDD0098	35.78	36.28	0.37	3.03	0.03	1.13
KMDD0098	56.25	60.79	3.38	58.63	0.61	198.16
KMDD0098	66.75	67.68	0.71	1.72	0.03	1.22
KMDD0098	70.15	71.60	1.10	3.67	0.63	4.05
KMDD0098	72.90	74.82	1.46	3.74	0.97	5.47
KMDD0098	81.00	88.70	5.64	8.81	0.58	49.70
KMDD0098	94.02	94.54	0.38	1.41	0.97	0.54
KMDD0099	42.20	43.18	0.44	3.00	0.01	1.31
KMDD0099	46.76	54.26	3.34	8.17	0.08	27.30
KMDD0099	56.00	57.00	0.45	1.00	0.03	0.45
KMDD0099	57.95	58.64	0.31	1.39	1.34	0.43
KMDD0099	60.70	62.20	0.67	28.63	0.39	19.13
KMDD0099	125.65	126.62	0.37	0.08	1.15	0.03
KMDD0099	159.00	163.90	1.61	0.65	0.58	1.05
KMDD0099	170.70	171.00	0.12	0.17	1.08	0.02
KMDD0099	181.63	182.00	0.14	6.34	0.65	0.90
KMDD0099	239.37	239.60	0.09	1.64	2.11	0.14
KMDD0099	239.60	241.44	0.71	2.86	2.78	2.02
KMDD0099	241.66	242.20	0.21	1.75	1.12	0.36
KMDD0099	247.92	249.59	0.37	0.65	1.13	0.24
KMDD0099	249.59	250.68	0.37	8.13	0.08	3.03
KMDD0099	259.30	259.62	0.12	1.00	0.03	0.12
KMDD0099	261.15	261.40	0.10	1.48	0.04	0.14
KMDD0100	77.00	81.10	1.86	8.41	0.65	15.61
KMDD0100	88.13	94.97	2.79	6.91	0.16	19.30
KMDD0100	94.97	95.75	0.35	0.84	0.73	0.30
KMDD0100	96.75	102.1	2.42	1.36	0.57	3.29
KMDD0101	162	170.58	3.35	7.23	1.22	24.20
KMDD0102	51.6	61.45	6.93	9.1	1.03	63.19
KMDD0102	63.8	66	1.55	31.9	0.05	49.32
KMDD0102	68.12	69	0.62	1.3	0.31	0.80
KMDD0102	69	70	0.70	0.2	0.18	0.15
KMDD0102	72.33	73.6	0.89	1.6	3.51	1.41
KMDD0102	118.05	118.64	0.30	1.3	0.03	0.40
KMDD0102	118.64	122	1.73	11.4	2.72	19.65

### 31 GLOSSARY OF TECHNICAL TERMS AND ABBREVIATIONS

This glossary comprises a general list of common technical terms that are typically used by geologists. The list has been edited to conform in general to actual usage in the body of this report. However, the inclusion of a technical term in this glossary does not necessarily mean that it appears in the body of this report, and no imputation should be drawn. Investors should refer to more comprehensive dictionaries of geology in printed form or available in the internet for a complete glossary.

“2D”	Two dimensional space, typically Y and Z planes
“3D”	Three dimensional space, Y, X, Z planes
“200 mesh”	the number of openings (200) in one linear inch of screen mesh (200 mesh approximately equals 75 microns)
“AAS”	Atomic Absorption Spectroscopy
“Ag”	chemical symbol for silver
“Au”	chemical symbol for gold
“AuEq”	Gold equivalent, assumptions include metal prices and assumed metallurgical recoveries.
“BLA”	Bilimoian Landowners Association
BSc (Hons)	Bachelor of Science with Honours
“block model”	A block model is a computer based representation of a deposit in which geological zones are defined and filled with blocks which are assigned estimated values of grade and other attributes. The purpose of the block model (BM) is to associate grades with the volume model. The blocks in the BM are basically cubes with the size defined according to certain parameters.
“bulk density” “BD”	The dry in-situ tonnage factor used to convert volumes to tonnage. Bulk density test work is carried out on site and is relatively comprehensive, although samples of the more friable and broken portions of the mineralized zones are often unable to be measured with any degree of confidence, therefore caution is used when using the data.
“°C”	Degrees Celsius
“Cu”	Chemical symbol for copper
“DDH” “diamond drilling, diamond core”	Rotary drilling technique using diamond set or impregnated bits, to cut a solid, continuous core sample of the rock. The core sample is retrieved to the surface, in a core barrel, by a wireline.
“down-hole survey”	Drillhole deviation as surveyed down-hole by using a conventional single-shot camera and readings taken at regular depth intervals, usually every 50 metres.
“drill-hole database”	The drilling, surveying, geological and analyses database is produced by qualified personnel and is compiled, validated and maintained in digital and hardcopy formats.
“EL”	Exploration Lease
“FA”	Fire Assay
“g.m”	Grams x metres, metal accumulations across the width of the vein
“grade cap, also called top cut”	The maximum value assigned to individual informing sample composites to reduce bias in the resource estimate. They are capped to prevent over

	estimation of the total resource as they exert an undue statistical weight. Capped samples may represent “outliers” or a small high-grade portion that is volumetrically too small to be separately domained.
“g/t”	grams per tonne, equivalent to parts per million
“g/t Au”	grams of gold per tonne
“HGL”	Highlands Gold Limited
“HPL”	Highlands Pacific Limited
“ID” “inverse distance estimation”	<p>It asserts that samples closer to the point of estimation are more likely to be similar to the sample at the estimation point than samples further away. Samples closer to the point of estimation are collected and weighted according to the inverse of their separation from the point of estimation, so samples closer to the point of estimation receive a higher weight than samples further away.</p> <p>The inverse distance weights can also be raised to a power, generally 2 (also called inverse distance squared, ID2). The higher the power, the more weight is assigned to the closer value. A power of 2 was used in the estimate used for comparison with the OK estimates.</p>
“Inferred Resource”	<p>An ‘Inferred Mineral Resource’ is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.</p>
“Indicated Resource”	<p>An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve.</p>
“IRG” or “IRGC”	Intrusion Related Gold or Intrusion Related Gold Copper
“JORC”	<p>The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 (the ‘JORC Code’ or ‘the Code’) sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves. The Code is a required minimum standard for Public Reporting b. JORC also recommends its adoption as a minimum standard for other reporting. Companies are encouraged to provide information in their Public Reports that is as comprehensive as possible. The definitions in the JORC Code are either</p>

	identical to, or not materially different from, those similar codes, guidelines and standards published and adopted by the relevant professional bodies in Australia, Canada, South Africa, USA, UK, Ireland and many countries in Europe.
“kriging neighbourhood analysis, or KNA”	The methodology for quantitatively assessing the suitability of a kriging neighbourhood involves some simple tests. It has been argued that KNA is a mandatory step in setting up any kriging estimate. Kriging is commonly described as a “minimum variance estimator” but this is only true when the block size and neighbourhood are properly defined. The objective of KNA is to determine the combination of search neighbourhood and block size that will result in conditional unbiasedness.
“km”	Kilometre Unit of Length = 1000 metres. km <sup>2</sup> unit of area = 1km x 1 km
“kVa”	1000 volt-amperes
“lb”	Avoirdupois pound (= 453.59237 grams). Mlb = million avoirdupois pounds
“micron (μ)”	Unit of length (= one thousandth of a millimetre or one millionth of a metre).
“mm”	Millimetre (=1/1000 metre)
“LMP”	licence for mining purposes
“LOM”	Life of Mine
“LTC”	Land Titles Commission
“m”	Metric Metre
MAusIMM(CP)	Member of The Australian Institute of Mining and Metallurgists (Certified Professional)
MAIG	Member of The Australian Institute of Geoscientists
“Measured Resource”	A ‘Measured Mineral Resource’ is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.
“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.
“ME”	Mining Easements
“ML”	Mining Lease
“MOA”	Memorandum of Agreement



“MRA”	Mineral Resources Authority of Papua New Guinea
“NN” “nearest neighbour estimation”	Nearest Neighbour assigns values to blocks in the model by assigning the values from the nearest sample point to the block attribute of interest.
“OH&S”	Occupational Health and Safety
“OK” “ordinary Kriging estimation”	Kriging is an inverse distance weighting technique where weights are selected via the variogram according to the samples distance and direction from the point of estimation. The weights are not only derived from the distance between samples and the block to be estimated, but also the distance between the samples themselves. This tends to give much lower weights to individual samples in an area where the samples are clustered. OK is known as the “best linear unbiased estimator. The kriging estimates are controlled by the variogram parameters. The variogram model parameters are interpreted from the data while the search parameters are optimised during kriging neighbourhood analysis.
“oz”	Troy ounce (= 31.103477 grams). Moz = million troy ounces
“PGK”	Papua New Guinea Currency, Kina.
“pH”	measure of the acidity or basicity of an aqueous solution (scale 1 to 14)
“PhD”	Doctorate of Philosophy
“PNG”	Papua New Guinea
“Portal”	Opening/access to the underground Mine, Adit
“QA/QC”	Quality Assurance (“QA”) concerns the establishment of measurement systems and procedures to provide adequate confidence that quality is adhered to. Quality Control (“QC”) is one aspect of QA and refers to the use of control checks of the measurements to ensure the systems are working as planned.
“RC drilling”	Reverse Circulation drilling. A method of rotary drilling in which the sample is returned to the surface, using compressed air, inside the inner-tube of the drill-rod. A face-sampling hammer is used to penetrate the rock and provide crushed and pulverised sample to the surface without contamination.
“ROM”	Run of Mine, usually referring to an ore stockpile near the crusher
“survey”	Comprehensive surveying of drillhole positions, topography, and other cadastral features is carried out by the Company’s surveyors using ‘total station’ instruments and independently verified on a regular basis. Locations are stored in both local drill grid and UTM coordinates.
“Stoping”	An underground excavation made by the mining of ore from steeply inclined or vertical veins
“t”	Metric Tonne (= 1 million grams) “kt” = thousand tonnes
“te”	Chemical symbol for tellurium
“t/h”	Tonnes per hour
t/m <sup>3</sup>	Tonnes per metre cubed (density units)
“TSF”	Tails Storage Facility
“unfolded space”	Undulating 3D veins projected onto a 2D plane.
“variogram”	The variogram (or more accurately the Semi-variogram) is a method of displaying and modelling the difference in grade between two samples

	separated by a distance $h$ , called the “lag” distance. It provides the mathematical model of variation with distance upon which the Krige estimation method is based.
“wireframe”	This is created by using triangulation to produce an isometric projection of, for example, a rock type, mineralization envelope or an underground stope. Volumes can be determined directly of each solid.