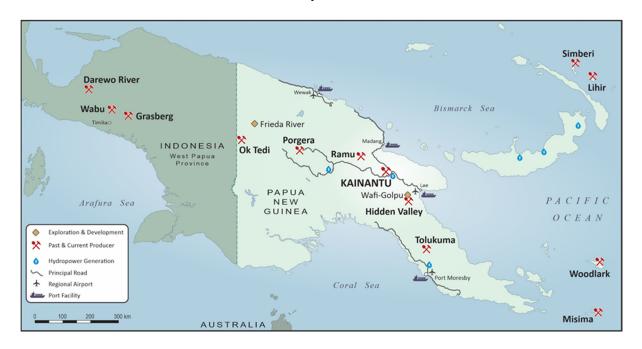
# REVISED INDEPENDENT TECHNICAL REPORT MINERAL RESOURCE ESTIMATE UPDATE AND PRELIMINARY ECONOMIC ASSESSMENT

# FOR EXPANSION OF THE KAINANTU MINE TO TREAT 1 MTPA FROM THE KORA GOLD DEPOSIT,

### KAINANTU PROJECT, PAPUA NEW GUINEA



Prepared by Nolidan Mineral Consultants, H&S Consultants,

Australian Mine Design and Development

and Mincore

for

K92 Mining Inc.

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#### 1 SUMMARY

#### 1.1 INTRODUCTION

This report is an Revised Independent Technical Report report dated 13 November 2020 of the geology, exploration, mineral resource estimates, and mining scoping study for the Kora gold-copper deposit at the Kainantu project. The Kainantu property covers a total area of 856.45 sq.km (including 201.19 sq.km under application) and is located in the Eastern Highlands Province of Papua New Guinea, approximately 180 km west-northwest of Lae.

In June 2020 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 gold-copper deposits and the new process plant studies.

H&SC were engaged by K92 to prepare an updated mineral resource estimate for the Kora deposit, including the extended Kora North deposit, previously reported by H&SC in September 2018. AMDAD was engaged to undertake a Scoping Study for the development of the Kora deposit. In conjunction with the Scoping Study, Mincore was engaged to carry out a detailed study on the potential replacement of the existing processing plant to treat 1,000,000tpa of ore from the Kora deposit.

As part of the 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.

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 (the K92ML Purchase Agreement) dated 11 June, 2014 (which closed 06 March, 2015), for the sum of US\$2,000,000. Under the terms of that agreement K92PNG was obligated to make additional payments of up to US\$60,000,000. The obligation to pay additional payments was to cease on 06 March, 2025.

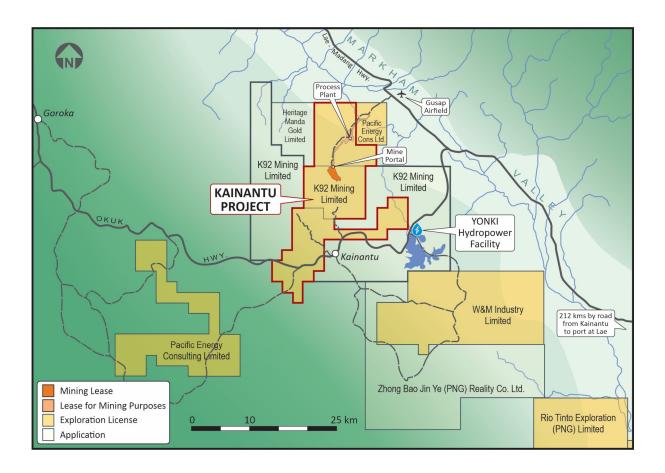
However, during 2019 the K92ML Purchase Agreement with Barrick was amended whereby K92PNG revised the contingent payment to a fixed payment of US\$12.5 million which was paid to Barrick Gold Corporation on 23 August, 2019.

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, 2019; K92 have lodged an application for renewal for a further two years;
- Exploration Licence 693 ("EL693"), effective until February 05, 2019; K92 have lodged an application for renewal for a further two years;
- Exploration Licence 1341 ("EL1341"), effective until June 20, 2018. K92 have lodged an application for renewal for a further two years;
- Exploration Licence 2619 ("EL2619"); effective until January 22, 2022.
- Exploration Licence Application 2620 ("ELA2620"); application lodged February 15, 2019.



#### **Kainantu Project Location and Tenements**

Source: K92ML 2020

#### 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. A north-northeast trending transfer structure transects the area, with associated mineralization, alteration and porphyry complexes aligned along it.

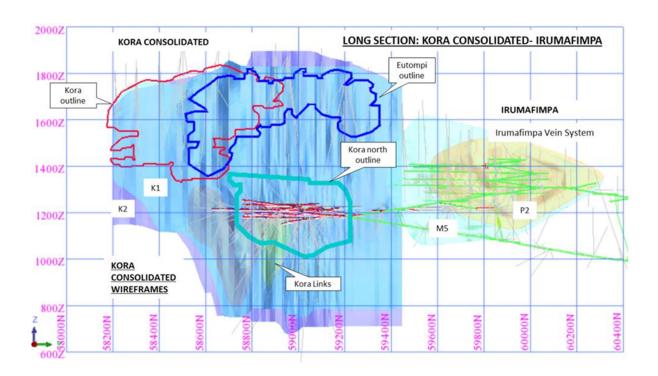
Mineralization on the property includes gold, silver and copper occurring in epithermal Au-telluride veins (Irumafimpa) and Au Cu Ag sulphide veins of Intrusion Related Gold Copper ("IRGC") affinity (Kora) and also less explored porphyry Cu Au systems; and alluvial gold. The Kora-Irumafimpa (including Eutompi and Kora North)

vein deposit has been demonstrated from K92 Mining's drilling results to be a continuous mineralised structure. The April 2020 Mineral Resource Estimate has produced a Kora Consolidated resource comprising the Kora, Kora North and Eutompi deposits. The Irumafimpa deposit has recent mining activity and is reported as a separate resource. The mineralized structure occurs in the centre of a large mineralized system approximately 5 km x 5 km in an 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 3.4m true width, which is the entire extent of the known veins before cut-off grades are applied. The Kora veins range from 2m (Kora No. 1 vein) up to 9m true width (Kora No. 2 vein). The Mill veins at Irumafimpa average 1.2m true width, which is the minimum width used during resource estimation.

Two stages of mineralization have been recognized; an early sulfide-rich Cu-dominant stage overprinted by a quartz-rich Au-dominant stage with high grade gold associated with tellurides. At Kora Consolidated both the sulphide-rich Cu-dominant and quartz-rich Au-dominant mineralization occur along the same NW trending subvertical structure.

The Kora Consolidated deposit currently comprises two parallel, steeply west dipping, N-S striking quartz-sulphide vein systems, K1 and K2. An additional structure, the Kora Link, has also been defined and provides a possible link between the two main vein systems. Drilling has confirmed that the overall system has a vertical extent greater than 1000m.



#### 1.3 2020 KORA CONSOLIDATED RESOURCE ESTIMATE

The updated Global Mineral Resource estimate (using a 1g/t gold cut-off) for the Kora Consolidated deposit effective 02 April 2020 is tabulated below:

Global									
Category	Mt	Au g/t	Au Moz	Ag ppm	Ag Moz	Cu %	Cu Kt	Au_Eq g/t	Au_Eq Moz
Measured	0.66	13.34	0.28	11.6	0.25	0.51	3.4	14.14	0.3
Indicated	2.47	8.44	0.67	16.3	1.29	0.63	15.6	9.46	0.8
Total M & I	3.13	9.47	0.95	15.3	1.54	0.61	19.0	10.45	1.1
Inferred	12.67	7.32	2.98	19.9	8.11	1.10	139.4	9.01	3.7

Mineral Resources were estimated and verified by Simon Tear (PGEO), a director of independent consultancy H & S Consultants Pty. Ltd., Sydney, Australia (April, 2020). The Mineral Resources have been classified under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves.

Metal equivalents are reported here to give a better indication of potential project value. K92 requested reporting of a gold equivalent (Au\_Eq) g/t to include copper and silver credits using the formula:

Au g/t +( $(0.923 \times Cu\%) \times 1.494$ )) + ( $(0.77 \times Ag g/t) \times 0.0115$ ).

Assumptions provided by K92 include:

- Gold price of US\$1,400/oz; Silver US\$16.05/oz; Copper US\$3.05/lb
- Recoveries relative to gold of 92.3% for copper and 77% for silver

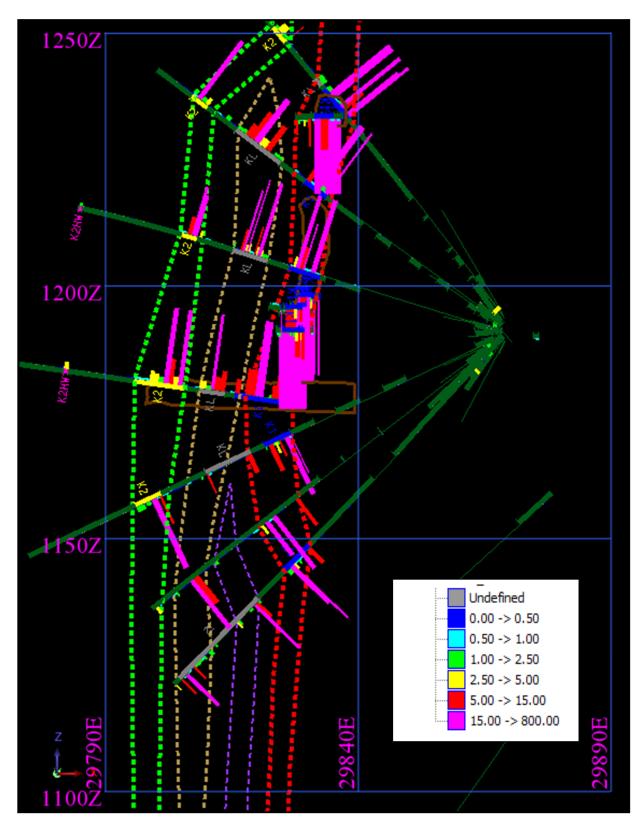
The Kora-Irumafimpa (including Eutompi and Kora North) vein deposits has been demonstrated from K92 Mining's drilling results to be a continuous mineralised structure. Drilling from the surface targeted the area above Kora North and below Eutompi enabling the consolidation of the Kora, Eutompi and Kora North deposits in the Mineral Resource Estimate (MRE).

The diamond drilling uses several core sizes at the Kora North deposit, namely LTK60, NQ, NQ2 and HQ. At surface, all holes were collared to various depths in PQ with HQ and NQ used to get competent samples through the lode system. Reconciliation data to end of March 2020 would appear to justify that the combination of using both drillhole and face sampling data, no widespread use of top cuts, composite length, geological interpretation and search parameters to remove/significantly reduce any smearing of the very high gold grades and thus any subsequent over-statement of the resource estimates. All information in the diagrams has been plotted in the local grid coordinates.

The MRE for the Kora Consolidated deposits 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. A 3D interpretation of geological domains as wireframes for the K1, K2 and 3 Kora Link lodes (KL1 to 3) was completed using the Surpac mining software.

The figure below is a cross section showing drillhole traces with a histogram of gold grades and logged vein. The K2 lode interpretation is shown as a green dash, the K1 lode as a red dash and the brown and purple dash as the Kora Link lodes. The dark brown solid lines represent the current excavations including some K1 stoping.

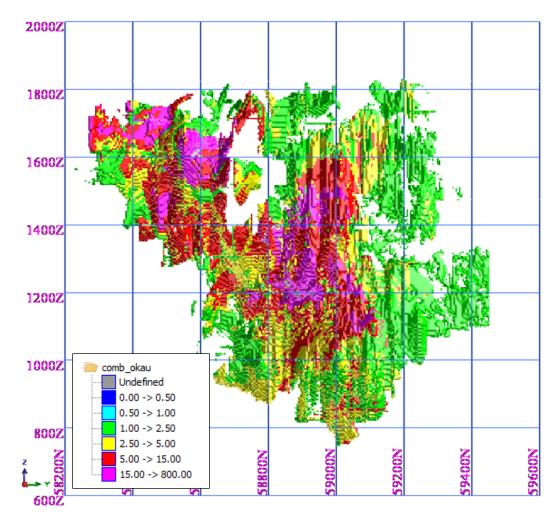
(note: the lengths of the colour bars are intended to be relevant to the gold grade, but gold grades are so high that the maximum length has been limited at 30g/t)



Geological Interpretation for Kora North Cross Section 58900mN (H&SC)

The constraints for reporting the resource estimates for the K1 lode are uncut gold grade for block centroids inside the K1 mineral wireframe with mined depletion removed. The constraints for the K2 lode are cut gold grade (1000g/t) for block centroids inside the K2 mineral wireframe with mined depletion removed. The same K1 constraints are used for reporting resource estimates for the Kora Link lodes KL1 and KL3, with the same constraints for the KL2 estimates but for cut gold grade data at 150g/t.

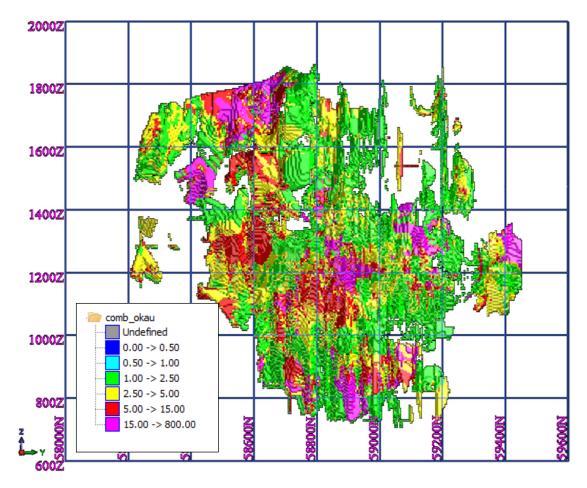
The figure below shows the gold block grade distribution in long section for the K1 lode resource estimates.



K1 Lode Mineral Resources Gold Long Section 1g/t Au Cut Off (H&SC)

(view looking west)

The figure below shows the gold block grade distribution in long section for the K2 lode resource estimates.



K2 Lode Mineral Resources Gold Long Section 1g/t Au Cut Off (H&SC)

(view looking west)

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. To counteract the complex grade distribution H&SC has fused a combination of composite length, geological interpretation, variography and search parameters to minimise the possible over-statement of grade within the resource estimates. This appears to have been successfully completed based on the block model validation and reconciliation with mill production.
- The sampling methods: the bulk of the resource estimates have been generated from diamond drilling results which is generally considered the best sampling technique (assuming good core recoveries). However, a substantial amount of the high grade assays are from face sampling which can be prone to variance associated with the actual sampling method. It is worth noting that the development and stoping associated with the face sampling appears to be reconcilable with the block model.
- The general drill hole spacing and hence data distribution is considered wide for a large part of the deposit. The close spaced face sampling and subsequent mining provides a high level of confidence in the gold grade continuity in that area.
- 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
  used for reporting the tonnage of the resource.
- No issues were detected with the sample preparation or assaying of the drillcore and face samples for the K92ML drilling.

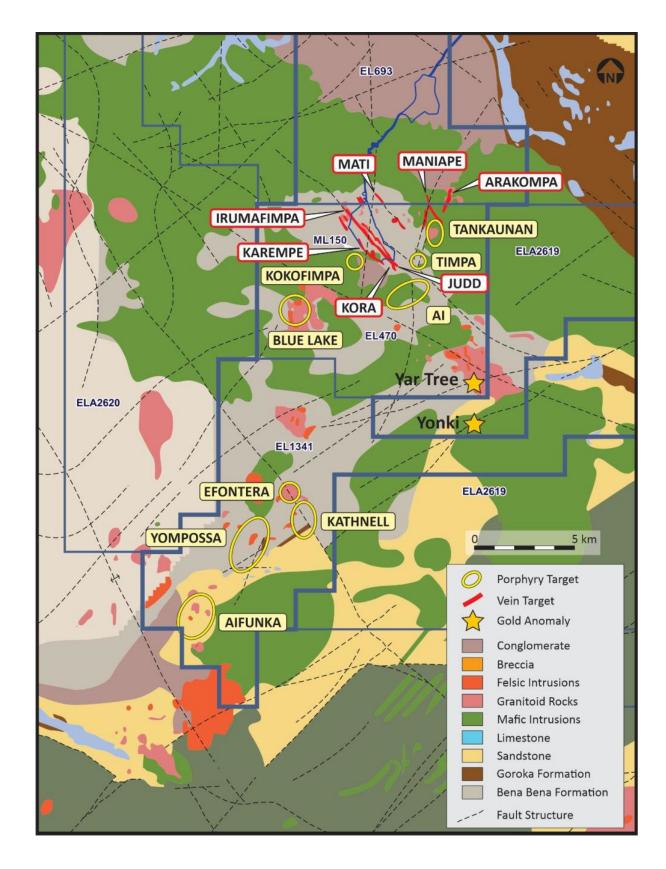
- The QAQC procedures and outcomes: these are considered to industry standard and the QAQC outcomes
  impart a high level of confidence in the appropriateness of the sampling methods and the accuracy of the
  assays.
- Core recoveries: the current recovery of >95% is reasonable but some of the initial drilling was a little low (around the 90% mark). However, the confidence level in the gold grade of the samples is high with no bias associated with core recovery
- Reconciliation: this is reasonable with predicted block model ounces 12% under mill production up to the
  end of March 2020. This has allowed for a reasonably high level of confidence in the gold content for
  material in the immediate vicinity of the development drives and mined stopes.

#### 1.4 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 the Kora lodes are strongly mineralized at the limit of drilling and remain open to the south and at depth. In addition there is the Judd, Kerempa and other unnamed mineralized lodes parallel to the defined K1 and K2 resource estimates which have economically attractive gold grades in surface outcrops and/or drill samples from limited work to date.

Recent drilling by K92ML at the Blue Lake prospect within EL470 has highlighted a possible porphyry copper-gold system at depth.



Kainantu geology and known vein and porphyry prospects.

(Source: K92ML, 2020)

#### 1.5 PREVIOUS MINING AND PROCESSING

The processing plant built by HPL to treat the Irumafimpa lodes used simple processing consisting of crushing, screening and grinding equipment. The sulphide bearing material is processed to liberate the gold by flotation

producing a gold-rich flotation concentrate as a saleable product. The plant was operated between 2006 and 2009 and then placed on care and maintenance between January 2009 and September 2016.

Rehabilitation by K92ML of the Irumafimpa mine, process plant and associated infrastructure commenced in March 2016. The first batch of underground ore from Irumafimpa was treated in October 2016. K92ML 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 northern extension discovery.

The existing plant is currently undergoing an expansion to allow ore processing at an increased rate of 400,000 tpa. The expansion encompasses installation of a larger secondary crusher, with the existing crusher relegated to standby service. The existing Flotation circuit has been reconfigured for new Rougher duty with new Cleaner and Re-Cleaner Flotation Cell banks added. The existing Concentrate Filter Press is being upgraded to maximise capacity.

#### 1.6 SCOPING STUDIES

The preliminary economic assessment for Kora is preliminary in nature. It is based on a mine plan which 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. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Additionally, further geotechnical assessment is required to confirm the feasibility of stope designs. There is no certainty that the preliminary economic assessment will be realized.

Key points and estimates from the Kora Mining Study prepared by AMDAD are:

- Resource drilling has linked mineralization that was previously two separate areas, Kora and Kora North, into
  a single continuous zone. The June 2020 Mineral Resource Estimate and the updated PEA mine plan now
  refer to the combined deposit simply as Kora.
- The mine plan has been updated with the latest resource to target a 1Mtpa production rate. It is based primarily on longhole stoping with an optimised cutoff grade of 5.5g/t gold equivalent.
- Some "incremental" stope material is also included at the end of the mine life. This is material that is below the optimal cut-off grade of 5.5 g/t gold equivalent but above the marginal economic cut-off grade of 3.04 g/t gold equivalent.
- The mine plan and PEA estimates are for mining operations from 1 January 2021 onwards, modelling the project expansion from 400ktpa to 1Mtpa. The production estimates exclude those parts of the Mineral Resources that were, or are planned to be, extracted between 1 April 2020 and 31 December 2020.
- The updated Kora mine design includes 118,485m of lateral development and 6,951m of vertical development.
- Planned treatment totals 9.8Mt tonnes at 8.8 g/t gold, 1.0%copper, 18 g/t silver, (10.4g/t gold equivalent) over the 12-year LOM plan. This comprises 2,240kt from development and 7,547kt from stoping.
- This production would generate an estimated positive pre-tax cash flow of US\$2,856 million using the following metal prices: gold US\$1500/oz, copper US\$3.0/lb, silver US\$18/oz. This pre-tax cashflow includes allowances for capital.
- Production is estimated at 2.64M oz gold, 88t copper and 4.25M oz silver (3.10M oz gold equivalent) over the life of mine (LOM). The LOM production cost, including capex and sustaining capex, is estimated at US\$523/oz gold and US\$447/oz gold equivalent.
- The PEA production estimates would generate a simple pre-tax discounted cashflow of US\$2,061 million; using the PEA metal prices stated above, and a 5% discount rate.
- The PEA production estimates would generate, using information and tax computations provided by the issuer, a simple after-tax discounted cashflow of US\$1,569 million; using the PEA metal prices stated above, and a 5% discount rate.

•	The LOW Capital Cost breakdown is summarised in the table below.							

Capital Type	US\$M		
Up-front Capital	125		
Sustaining Capital	341		
Total	466		

- Operating Cost is estimated to be US\$94/tonne of ore for the LOM.
- The estimated pre-tax cashflow for 2021 onwards is always positive indicating that the new 1Mtpa mill and mine capital will be self-funding.
- The sensitivity of pre and, using information and tax computationsprovided by issuer, after-tax DCF5% to gold price is shown in the table below.

Gold Price, US\$/oz	Pre-Tax DCF <sub>5%</sub> , US\$M	After-Tax DCF <sub>5%</sub> , \$M		
1,400	1,875	1,439		
1,500	2,061	1,569		
1,600	2,247	1,700		
1,700	2,433	1,830		
1,800	2,619	1,960		

Pre and after-tax DCF<sub>5%</sub> sensitivity to gold price

#### 1.7 TREATMENT PLANT UPGRADE

Design criteria, process flow sheets and a mass balance for a 1Mtpa plant treating material from a copper-gold sulphide deposit have been developed. The design and equipment selection is based on current site experience with operational improvements.

Conventional single stage crushing followed by a SAG milling circuit was chosen in place of the current multi stage crushing and ball mill circuit based on the nature of the ore and the expectation that the clay content in plant feed will increase. The milling circuit includes flash flotation and a gravity circuit to capture free gold for smelting on site to produce gold dore.

Conventional sulphide flotation, thickening, filtering and concentrate drying is employed to produce a high grade concentrate which is loaded into shipping containers for transport to smelters.

#### 1.7.1 Process Plant Capital Costs

The total estimated installed capital cost for the 1Mtpa Processing Plant is US\$46.26 million and includes a ±30% contingency allowance of US\$10.67 million.

The total estimated installed capital cost for the new centralised power station and 11kV reticulation is US\$15.8 million and includes a ±30% contingency allowance of US\$3.65 million.

#### 1.7.2 Process Plant Operating Costs

Total annual processing cost for a 1Mtpa throughput is estimated as USD\$24.37 million with plant reagents (20%) and power (28%) the major components.

#### 1.7.3 Tailings Management

The expansion of the processing plant will result in an increase in the volume of tailings. The company aims to increase the capacity of their existing tailings storage facility (TSF) to ensure there is sufficient space to store the increased tailings volume.

As part of the proposed 1 Mtpa Expansion a Paste Fill system is proposed for stopes underground. This system has the added advantage of placing tailings material underground, thereby reducing the volume of tailings disposed in the existing storage tailings facility.

This is a technically proven and safe option at similar operations that would substantially increase the storage capacity of tailings produced by the mine.

The preliminary assessment of this solution has confirmed the viability of this option. It involves a dewatering process located at the processing plant and the thickened tailings pumped to a paste plant located at the 800 Portal.

K92ML engaged Mincore to assess the option of recycling of the tailings to produce backfill material for the underground operation. The design criteria, process flow sheets and a mass balance for the waste management to recycle the tailings as paste backfill, will be used for the 1Mtpa process plant expansion. The design and equipment selection is based on current site experience with operational improvements.

A Continuous Paste Plant at the 800 Portal is confirmed as the preferred option due to the simplicity in operation, capital cost and operating cost. The total estimated installed capital cost for the 1Mtpa processing plant to recycle the tailings as paste backfill is estimated to be US\$19.8 million which includes a ±30% contingency allowance of US\$4.57 million.

Annual operating cost for the 1Mtpa processing plant to recycle the tailings as paste backfill is estimated as USD\$6.8 million.

#### 1.8 RECOMMENDATIONS

#### 1.8.1 Exploration

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. Thus a significant infill drill programme, initially at 50m centres, is required to upgrade the resource estimates.

K92 should also look to continue drilling for resource extensions to veins within or close to ML 150. The Kora South prospect has numerous artisanal workings and mineralized outcrops. Drill testing is proposed for 2020. The target has not previously been drilled.

There is an insufficient amount of density data for grade interpolation and thus a revision to the density measuring protocol is required to generate more density data with upcoming drilling.

The two-year work program for EL470 includes a proposed minimum expenditure of PGK 1,200,000 (Year 1 PGK 600,000; Year 2 PGK 600,000) for the period ending February 4, 2021. Additional drilling to delineate the lateral extent of the propylitic mineralized shell more closely at Blue Lake (Kotampa) prospect is planned in 2020 followed by deeper targeted drilling to locate a deeper potassic core.

The two-year work program for EL693 includes a proposed minimum expenditure of PGK 1,000,000 (Year 1 PGK 500,000; Year 2 PGK 500,000) for the period ending February 4, 2021. Work will focus on further evaluation of the Maniape and Arakompa prospects which both have historical resource estimates.

A proposed expenditure of PGK 800,000 (Year 1 PGK 400,000; Year 2 PGK 400,000) has been submitted for EL1341 (for the 2-year period ending June 20, 2020) with priority targets at Yompossa (Yanabo) and Yauna.

#### 1.8.2 Mine

The following investigations are recommended to increase confidence in the mine plan and in the technical feasibility and economic viability of the project. It is proposed that this work will be completed in conjunction with a Mining Feasibility Study that would be underpinned by the next phase of resource upgrade work.

- Geotechnical Feasibility Study including:
  - o Geotechnical Data Collection, Data Review and Compilation
  - Update geotechnical model
  - o Geotechnical Analysis, to confirm:
    - K1 Mining Method
    - Development location, standoff distances, profile sizes
    - Vent raise assessment
    - Mining sequence
    - Stope dimensions
    - Backfill Requirements
    - Dilution estimates
    - Ground support requirements
- Trial Stoping, in conjunction with the Geotechnical Feasibility Study
- Hydrogeological investigations by hydrogeological specialists to improve confidence in estimates of water inflows, and to underpin the mine water management plan.
- A comprehensive ventilation study 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 to consider the implications, timing and costs involved.
- Paste Fill Feasibility Study including:
  - Tailings and paste testwork to confirm the feasibility and viability of paste fill, including cement (or similar) addition to achieve required fill strengths,
  - Paste plant design and capital and operating cost estimates, and
  - Paste delivery system design, including operating and capital costs
- A Mining Fleet, Materials Handling and Cost Study including:
  - Assessment of equipment required for development and production, covering specifications, capability, productivity, operating cost, training, maintenance.
  - Detailed design of the dedicated truck haulage-way system for ore including:
    - Truck-loading arrangements, ore pass layouts, stockpiles and chutes, and
    - Assessment of number and size of trucks required to meet the expansion production targets.
  - Mullock handling and stowage, in conjunction with backfill study, including a materials massbalance analysis,
  - Ancillary materials including aggregate for incline and road sheeting and production blasthole stemming, and
  - Associated mining cost estimates

#### 1.8.3 Treatment Plant

The following investigations are recommended to increase confidence in the treatment plant technical feasibility. It is proposed that this work will be completed during the Feasibility Study.

- Test work is required to validate design assumptions, give greater confidence in the selection of equipment and identify operational enhancements.
- Filter testwork and the subsequent selection of the type of filter equipment may allow the production of a filter cake which does not require further drying. This would eliminate one unit operation with associated production risk(s) and the associated capital and operating cost.
- Reagent screening of fluorine depressants may identify a more effective depressant resulting in the reduction or elimination of smelter penalties.
- Examination of the plant operating pH may identify that a lower pH is optimal resulting in reduced lime consumption and more pyrite to concentrate (subject to smelter requirements).
- A review of the need for direct truck tipping could result in reduced capital for the crusher feeder installation and remove trucks from the immediate area of the crusher, thereby reducing congestion and improve vehicle safety on the ROM pad.
- A review of the plant layout, especially the flotation area, may identify process streams that can flow by gravity and do not need pumping, resulting in capital and operating savings.

#### 2 INTRODUCTION

#### 2.1 ISSUER

This report is an Independent Technical Report dated 13 November 2020 of the geology, exploration, mineral resource estimates, and mining scoping study for the Kora gold-copper deposit at the Kainantu project. The Kainantu property covers a total area of 856.45 sq.km (including 201.19 sq.km under application) and is located in the Eastern Highlands Province of Papua New Guinea, approximately 180 km west-northwest of Lae.

In June 2020 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 gold-copper deposit and the new process plant studies.

H&SC were engaged by K92 to prepare an updated mineral resource estimate for the Kora deposit, including the Kora North deposit, previously reported by H&SC in September 2018. AMDAD was engaged to undertake a mining study for the development of the Kora deposit. In conjunction with this study, Mincore was engaged to carry out a detailed study on the potential replacement of the existing processing plant to treat 1,000,000tpa of ore from the Kora deposit.

As part of the 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 deposit
- Description of mining and milling infrastructure at Kainantu.
- Summarize the results of the preliminary economic assessment ("scoping study") of the Kora deposit.
- Summarize the studies on replacing the existing plant with a 1Mtpa treatment 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.

Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 07 January 2019.

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 has visited the Kainantu Gold Mine in November 2014, November 2016, and January 2020.

Mr. Simon Tear of H&SC visited the Kainantu site in October 2018.

Mr. Chris Desoe of AMDAD visited the Kainantu site in June 2016 and February 2020.

Lisa Park of Mincore has visited the Kainantu Gold Mine in January 2020.

#### 3 RELIANCE ON OTHER EXPERTS

The author has relied on information provided by the issuer concerning legal, tax and tax computations, political, and environmental; in particular Section 20, Environmental Studies, Permitting, and Social or Community Impact.

#### 4 PROPERTY DESCRIPTION AND LOCATION

The Kainantu property covers a total area of 856.45 sq.km (including 201.19 sq.km under application) 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.

#### 4.1 TENURE

The property comprises one exploration licence application (ELA 2620), four exploration licences (EL470, EL693, EL1341, and EL2619), 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 20.6 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").

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.

Nolidan has not undertaken any title search or due diligence on the tenement titles or tenement conditions. The tenement's status has not been independently verified by Nolidan other than a viewing of tenement information on the PNG Mineral Resource Authority website.

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 13, 2024;
- Mining Easements 80 and 81 ("ME80" and "ME81"), each effective until June 13, 2024;
- Licence for Mining Purposes 78 ("LMP 78"), effective until June 13, 2024;
- Exploration Licence 470 ("EL470"), effective until February 04, 2019; K92ML have lodged an application for renewal for a further two years;
- Exploration Licence 693 ("EL693"), effective until February 04, 2019; K92ML have lodged an application for renewal for a further two years;
- Exploration Licence 1341 ("EL1341"), effective until June 20, 2018. K92ML have lodged an application for renewal for a further two years;
- Exploration Licence 2619 ("EL2619"); effective until January 22, 2022.
- Exploration Licence Application 2620 ("ELA2620"); application lodged February 15, 2019.

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 was 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 was to cease on March 6, 2025

However, during 2019 the K92ML Purchase Agreement with Barrick was amended whereby K92PNG revised the contingent payment to a fixed payment of US\$12.5 million which was paid to Barrick Gold Corporation on August 23, 2019.

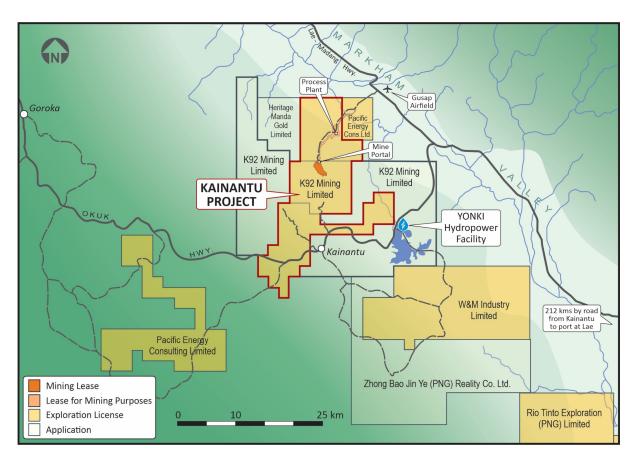


Figure 1. Kainantu Project Location and Tenements

Source: K92ML 2020

**Table 1. Project Tenure Details.** 

Source: K92ML 2020

Tenement No.	Grant Date	Expiry Date	Renewal or Appln. Date	Area (km²)	Rent (2018) Kina	Owners#
EL470	5/2/1982	4/2/2019	ТВА	92.65	12,769	K92ML
EL693	5/2/1986	4/2/2019	TBA	95.45	12,769	K92ML
EL1341	21/6/2004	20/6/2018	TBA	146.63	20,210	K92ML
ELA2619	23/01/2020	22/01/2022	Current	320.54	8,460	K92ML
ELA2620	Application	NA	15/02/2019	201.19		K92ML
ML150	4/6/2002	13/6/2024	Current	2.88	3,456	K92ML– 95% Landowners– 5%*
ME80**	14/6/2002	13/6/2024	Current	0.30	N/A	K92ML
ME81**	14/6/2002	13/6/2024	Current	0.35	N/A	K92ML
LMP78**	14/6/2002	13/6/2024	Current	2.09	2,512	K92ML

<sup>\*</sup> 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.

<sup>\*\*</sup> ME80, ME81 and LMP78 are linked to the current ML150.

#### 4.2 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.

The mine and mill refurbishment was effectively accomplished in September 2016. On June 30, 2018 K92ML advised the Mineral Resources Authority that the requirement to commence production from the Kora deposit had been met.

#### 4.3 EXPENDITURE COMMITMENTS

The tenement package has current annual rents of PGK 60,176.

Two-year work programs include a proposed minimum expenditure of PGK 1,200,000 for EL470 and PGK 1,000,000 for EL693 (for the period ending February 4, 2021). A proposed expenditure of PGK 800,000 was submitted for EL1341 (for the 2-year period to June 20, 2020).

#### 4.4 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 0.5% of mine revenue (there are no deductions allowed for concentrate transport, smelting and refining).

#### 4.5 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.

#### 4.6 OTHER SIGNIFICANT FACTORS AND RISKS

Environmental permitting, 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 cultivation in valley floors.

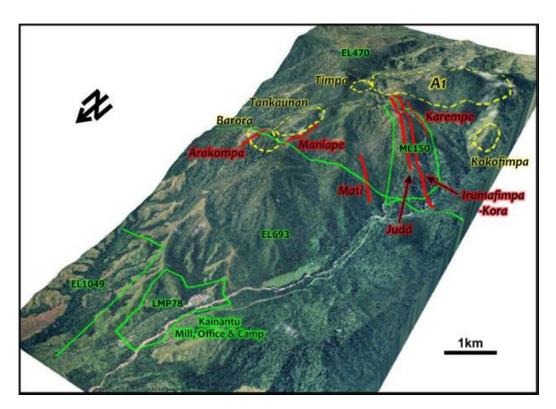


Figure 2. Oblique View of Northern Part of Property, Showing Relief and Location of Main Infrastructure.

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 at Kainantu has the Köppen classification of Af (tropical rainforest) with hot temperatures and wet conditions. 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.

**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 140 56 21 Offices Airport: Runway Length Runway max 1646m. 2440m. Gusap airstrip in use 2 x runways. 1 Runway; Commercial air travel: No Frequent Frequent Schools, hospital, police station, district and School, hospital, police station, district court, fuel stations, banks. Local Level Government Offices. Facilities: provincial court, tertiary Many education, fuel stations, banks

**Table 2. Local Resources to Property** 

#### 5.5 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.

#### 5.6 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.

#### 5.7 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 storage.

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 and Kora Mine. The plant was on care and maintenance between December 2008 and September 2016. Refurbishment of processing plant was completed in September 2016 and the first batch of underground ore from Irumafimpa treated in October 2016. In February 2018 K92 declared commercial production at the Kainantu mine and mine production focused on the Kora North area. Upgrades of site infrastructure continued in 2019 and 2020.

Further details of site infrastructure can be found in Section 18 Project Infrastructure of this report.

#### 6 HISTORY

Modern exploration did not commence until the early 1980s. After the discovery of the Irumafimpa deposit, 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 2004.

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 when K92ML commenced rehabilitation of the mine and processing plant.

#### 6.1 PREVIOUS OWNERSHIP

EL470 was granted to Renison Goldfield Consolidated (PNG) (RGC) in July 1982 as PA470 and the area of EL693 was granted to RGC as PA462 in December 1986. RGC entered a Joint Venture over the EL's 470 and 693 with Highlands Gold Resources Limited (HGL) in 1989, with HGL as the Operator. In 1994 RGC withdrew from the joint venture. 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 (EL1277), 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 EL's 1399, 1400 and 1049 and added two exploration license applications; ELA1898 and ELA1899. These two applications were later dropped in late 2013. EL1277 expired on May 20, 2009. The PNG Minister for Mining rejected Barracks application for renewal of EL1277 in December 2011.

The current total area of the tenement package is approximately 856 km<sup>2</sup> including exploration licence applications.

#### 6.2 HISTORICAL EXPLORATION 1928-2012

Gold was discovered 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.

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 diamond drilling was conducted in 1992 and 1993. In 1998 a review by HPL of all previous exploration conducted within the Kainantu district indicated a very high potential for discovery of a significant tonnage of high-grade gold mineralization within the Irumafimpa, Maniape and Arakompa vein systems.

In 1999-2000 the Nippon-Highlands joint venture drilled 26 holes in the Irumafimpa area with reasonable success. before Nippon withdrew from the joint venture in late 2000.

Local people had started mining parts of the Irumafimpa vein in 1992 after the discovery of the outcrop by Highlands Gold. Surface mining continues today and provides a source of income for some of the local people.

HPL commenced underground development of the Irumafimpa deposit in 2004, but the mine struggled to achieve planned mined grades, through a combination of geological complexity and unplanned dilution. Continued shortfalls in metal production resulted in Highlands Pacific selling the Kainantu assets to 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 prior to Barrick halting exploration and making a decision to divest the Kainantu project.

Further information on the past ownership and historic exploration activity at Kainantu is contained in the "Independent Technical Report, Resource Estimate and Summary of Mining Facilities, Kainantu Project, Papua New Guinea, dated 01 May 2015" which is filed on Sedar.

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

A total of 24 diamond holes were drilled by Barrick at Kora, including a single hole at the nearby Kerempa 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.

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. Several encouraging intersections of the Judd lode were made including 1m @ 4.1 g/t Au, 9m @ 8.8 g/t Au, and 1.1% Cu and 3m @ 278 g/t Au.

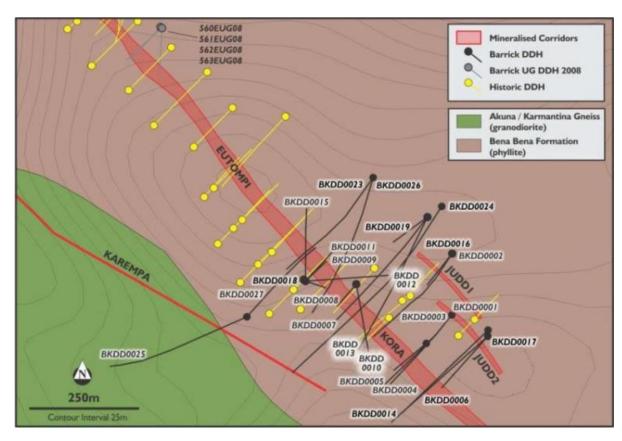


Figure 3. Local geology and Barrick drillhole location plan at Kora and Kerempa.

Source Barrick 2014

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

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)	Cu (%)	Metal Accumulation. Factor (gm)
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
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

#### 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. Corbett highlighted south east of the Kora vein a Barrick Mo in-soil anomaly (the A1 or Bilimoia prospect). He considered it may represent a possible intrusion-related upflow zone for the Kora-Irumafimpa low sulphidation deep epithermal Cu-Au vein mineralization.

Further information on past exploration reviews is contained in the "Independent Technical Report, Resource Estimate and Summary of Mining Facilities, Kainantu Project, Papua New Guinea, dated 01 May 2015" which is filed on Sedar.

# 6.5 HISTORICAL RESOURCE ESTIMATES

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 MRE 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" and "Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 07 January, 2019". The estimates are summarised below.

# 6.5.1 Irumafimpa-Kora 2017 Resource Estimate

The MRE 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 the 2017 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.

Irumafimpa is much more densely sampled because of underground development. Spacing between vein intercepts is of 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 the 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 remained 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.

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.

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. March 2017 Irumafimpa and Kora Mineral Resource Estimate

	March 2017 Irumafimpa and Kora Resource by Deposit and Category									
Donosit	Resource	Tonnes	Gold		Silver		Copper		Gold Equivalent	
Deposit	Category	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
Total Indicated		0.56	12.8	0.23	9	0.16	0.3	4	13.4	0.24
Total Inferred		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.

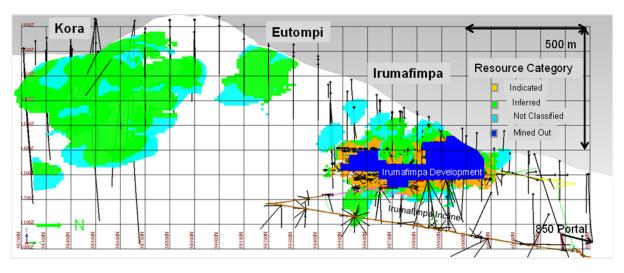


Figure 4. ML150 Long Section with 2017 blocks coloured by resource category (looking west)

Source: Nolidan 2017

# Key assumptions and parameters were:

- 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 cuts 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.
   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/m³ and vein blocks in the Kora deposit have been assigned a density of 2.8 t/m³

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.

# 6.5.2 Kora North September 2018 Resource Estimate

In 2018 a Mineral Resource was estimated by H & S Consultants Pty. Ltd., for the Kora North deposit (Table 5). It comprised:

- 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.

Se	September 2018 Global Mineral Resources Kora North Gold-Copper Deposit								
Category	Tonnes	Gold		Silver		Сорр	er	AuEq	
	Mt	g/t	Mozs	g/t	Mozs	%	Mlbs	g/t	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	12.9	0.29
Total M & I	0.85	12.9	0.35	13.1	0.36	0.7	13.3	14.1	0.39
Inferred Total	1.92	10.7	0.66	13.3	0.82	0.7	29.5	11.9	0.74

**Table 5. September 2018 Kora North Resource Estimate** 

Mineral Resources were 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:

 Mineralization comprises two parallel, steeply west dipping, grid 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 the 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 mineralization.
- 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 mineralization 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% x 1.53) + Ag g/t x 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

\*\* Barrick Ownership (mining and processing ceased in December 2008)

Further details are reported in Section 14 of the "Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea", dated 07 January 2019 which is filed on SEDAR.

# 6.6 HISTORIC PRODUCTION 2006 TO 2008

During the mining operation at Irumafimpa between 2006 and 2008, 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.

Table 6 shows mill production for the life of the mine from 2006 to its closure in 2008. 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.

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			
LOM Total 307,256 6.94 68,593						
* From Highlands Pacific annual reports						

Table 6. Kainantu Mill Production 2006 to 2008

### 6.7 CARE AND MAINTENANCE 2009 TO 2016

In January 2008, Barrick sought to place the mine into care and maintenance. 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.

K92ML commenced the refurbishment and rehabilitation of the mine, process plant and related infrastructure in February 2016. The Company received approval from the Mineral Resources Authority ("MRA") to recommence mining operations in October 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. In early 2017 the mine shipped the first concentrates containing gold and copper to the Port of Lae for shipment overseas for smelting and refining. K92ML announced the declaration of commercial production effective February 1, 2018.

K92ML started the Kora mine project by completing the underground incline drive from Irumafimpa to Kora and commencing underground drilling.

#### 6.8 PRODUCTION 2016 TO 2019

K92ML restarted mining operations in the Irumafimpa mining area. 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. Table 7 shows mill production since March 2016.

In late 2017 initial exploration drilling to the south of Irumafimpa identified mineralization in the area between Irumafimpa and Kora; in the area initially referred to as Kora North. In September & October 2017 K92 mined a bulk sample from the "Kora North" area and processed the material through the existing plant for metallurgical evaluation, with +90% recover achieved for both gold and copper In early 2018 mining activities ceased at Irumafimpa and the focus of mining changed to development of the Kora North deposit

Mining operations in 2019 continued to focus on Kora and comprised cut and fill stope mining from the K1 vein at the 1170, 1205 and 1225 mRL level as well as development tonnes from the K2 vein on the 1225 mRL level. The blend of primarily K1 material treated produced a gold head grade above and a copper grade below the anticipated long-term average grades.

Year	Mill tonnes	Head grade Au g/t Contained		Contained Oz Au		
2016**	633	3.41	69			
2017	61,932	4.47	8,90	00		
2018 ***	79,487	19.1	45,8	310		
2019	127,190	20.8	79,8	338		
** K92ML Restart, rehabilitation, refurbishment and commissioning from March 2016						

Table 7 Kainantu Mill Production 2016 to 2019

\*\*\* K92ML Commercial Production from February 2018

# Table 8. Kainantu Mill Treatment Statistics 2018 to 2019

Source: K92 Press Release

Year		2018	2019
Tonnes Processed	Т	79,487	127,190
Feed Grade Au	g/t	19.1	20.8
Feed Grade Cu	%	0.38%	0.37%
Recovery (%) Au	%	93.7%	93.7%
Recovery (%) Cu	%	92.9%	92.8%
Metal in Conc Prod Au	Oz	45,810	79,838
Metal in Conc Prod Cu	Т	277.27	432
Metal in Conc Prod Ag	Oz	10,069	22,984
Gold Equivalent Production	Oz	47,237	82,256

A general timeline of operations to date at Irumafimpa-Kora is shown in Table 9. There were several historical reviews into the poor performance of operations with recommendations for improvements.

Table 9. Summary of operations timeline for the Kainantu Project

rable 5. Summary of operations timeline for the Kamantu Project						
From	То	Mine Operations History (ML150)				
January 2004		Highlands Pacific DFS approved by Mineral Resources Authority				
2005	October 2007	Kainantu Gold Mine operated by 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				
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. Operations restarted with rehabilitation of mine, refurbishment and re-commissioning of the processing plant.
February 2018	Current	K92ML declared commercial production at Kainantu mine and production focused on the northern Kora 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 5). 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 (Williamson & Hancock. 2005).

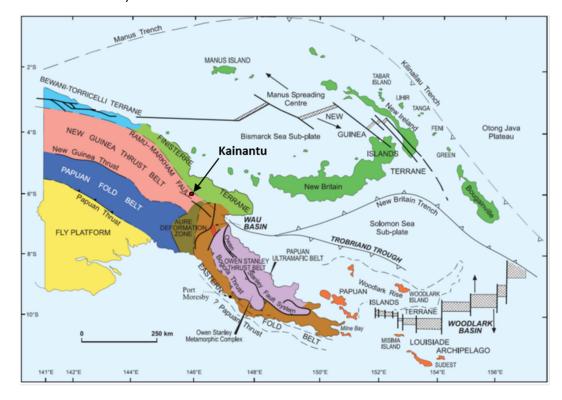


Figure 5. Tectonic Framework of Papua New Guinea, showing location of Kainantu property.

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 (

Table 10). 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. 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 11.

Table 10. Summary of main regional rock units identified within Kainantu area.

Age	Rock Units						
	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	"~~ Unconformity ~~~						
Lariv Mesozoic	Bena Bena Formation - pelite, psammite, conglomerate and marl metamorphosed to schist and phyllite.						

Table 11. 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 <sub>1</sub> <sup>2</sup> lineation, S2	NNE shortening				
D1b	Shear zone network	Localisation into zones of intense deformation				
D1aq	Main cleavage - S1 L1 lineation = L1 <sub>0</sub>	N-NE shortening				

### 7.3 MINERALIZATION OVERVIEW

Mineralization on the property includes gold, silver and copper occurring in low sulphidation epithermal Autelluride veins, Au-Cu-Ag sulphide veins of Intrusion Related Gold Copper ("IRGC") affinity, less explored porphyry Cu Au systems and alluvial gold.

The Kora-Irumafimpa (including Eutompi and Kora North) vein deposit has been demonstrated from K92 Mining's drilling results to be a continuous mineralised structure. The April 2020 Mineral Resource Estimate reported in Section 14 of this report has produced a Kora Consolidated Resource comprising the Kora, Kora North and Eutompi deposits. Mining is currently taking place at Kora North. In addition, there remains a Mineral Resource at Irumafimpa area that has had some modern mining activity (2007-2009). 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 vein and porphyry-style mineralization. Peripherally, exploration activities have also 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.

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

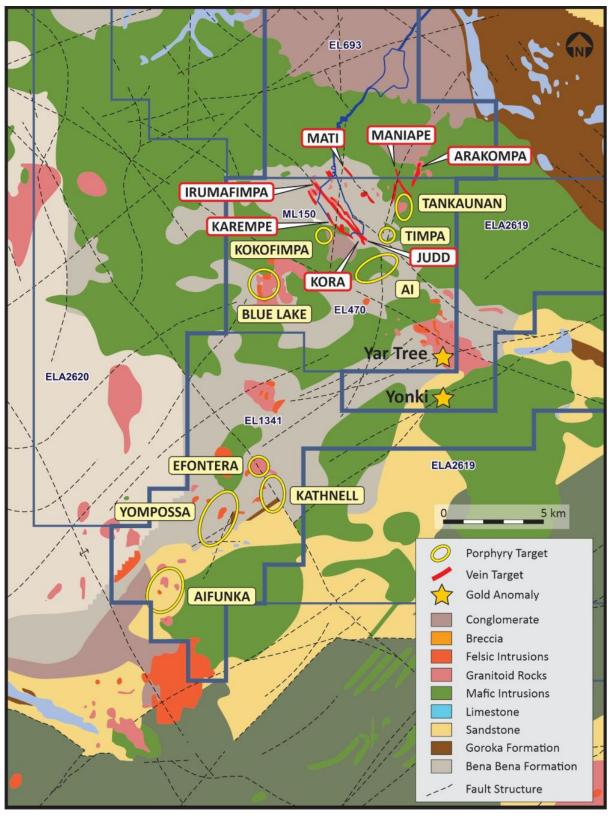


Figure 6. Kainantu property geology and known vein and porphyry deposits and prospects.

The prospects are summarised in Table 12 (modified by K92ML in 2020 from Barrick, 2014)

A summary of the mineralization style, host rocks, dimensions and geological continuity for the Kora-Irumafimpa vein deposit and the other vein and porphyry prospects for the Kainantu Project is shown in Table 12 and described further below.

Table 12. Summary of mineralization, host rocks, dimensions, and continuity for main Kainantu deposits and prospects

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
Irumafimpa	Epithermal Au-Te mineralization	Quartz veins in chlorite-sericite schist	Strike length of 1km 0.5-2m wide open at depth	Drilling indicates continuity of mineralization on a broad scale. Gold mineralization is discontinuous
Kora Consolidated (including Kora, Eutompi and Kora North)	Vein Low sulphidation Au-Cu (described in Section 7.4) (Mineral Resources reported in Section 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
KarempeKarempa	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

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
Maniape	Vein  Epithermal Au  Bena Bena Metamorphics, Akuna Diorite, Akuna Diorite, and diamono drilling		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
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

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
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	intrusions within the Bena Bena		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

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity
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
Aifunka	Skarn (Porphyry- related) Cu and Au Au (Barda reefs)	Mineralization is hosted in calcsilicate 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; 118m @ 0.1% Cu and 0.1 g/t Au in KSDD0004)	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 further mineralization below existing dril holes.	Undefined

Deposit / Prospect	Mineralization	Host Rocks	Dimensions	Continuity	
Kathnel	Base metal epithermal veins (Pb-Zn-Cu-Au)	- Undefined		Undefined	
Efontera	Porphyry Cu-Au	-	Undefined	Undefined	
Blue Lake	Porphyry Cu-Au (175m @ 0.3 g/t Au and 0.2% Cu in KTDD0001)	Feldspar porphyry intrusions within Akuna Granodiorite	Au/Cu geochem in soil anomaly is 1.2 x 0.8km	Undefined	

#### 7.4 KORA-IRUMAFIMPA VEIN SYSTEM

The Kora-Irumafimpa vein system, comprising Kora Consolidated, (made up of the Kora, Eutompi and 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 Kora-Irumafimpa vein system is summarised below in Table 13.

Table 13. 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 Consolidated 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. Higher copper grades, in the order of 2% Cu, occur at Kora (Coote, 2018; Muller et al., 2019). There appears to be a lateral zonation 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 either oxidation of tellurides at Irumafimpa, or as primary native gold at Kora Consolidated.

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

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 7).

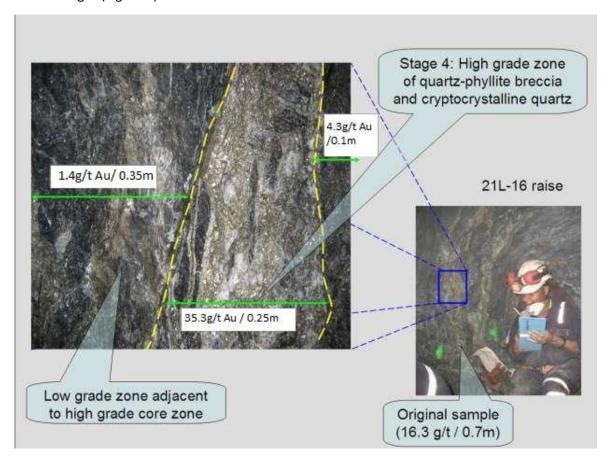


Figure 7. Diagram illustrating grade distribution within an original 0.7m sample.

(Source: Smith and Thomas, 2008)

# 7.5 HOST ROCKS

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

# 7.6 CONTROLS

The structural history of the Kora Consolidated-Irumafimpa area has been documented by Blenkinsop (2005). The Kora Consolidated-Irumafimpa vein system follows the main NW shear zones of the contiguous Kora, Eutompi, Kora North and Irumafimpa 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 13).

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

Late stage faults with clay gouge postdate the mineralization (

Table 11). These usually occur on the vein margins but can cause local disruption of the veins.

### 7.7 DIMENSIONS AND CONTINUITY

The current resources are part of 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 – rich quartz and sulphide lodes).

Historical and more recent exploration has identified and subdivided several shoots within the lodes, defining the Kora, Kora North, Eutompi and Irumafimpa deposits. In the 2019-2020 period drilling has amalgamated the Kora, Kora North and Eutompi mineralization into what is now termed Kora Consolidated.

The vertical extent from outcrop is significant, with Kora identified outcropping at the surface at 1750-1950m RL and Irumafimpa outcropping at 1300m RL. At Kora Consolidated, drilling has confirmed that the overall system has a vertical extent greater than 1.2km. Mineralization is open at depth and to the grid south. Wider mineralized zones (up to 6m) contain multiple high grade veins which may be splays. The Kora veins average 3.4m true width, which is the entire extent of the known veins before cut-off grades are applied. The Mill veins at Irumafimpa average 1.2m true width, which is 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. Drill density is now considered sufficient to include the Eutompi lode in the Kora Consolidated deposit. Drilling has confirmed that the intermediate and low sulphidation styles of mineralization continue throughout the Kora Consolidated deposit.

A longitudinal section including the Kora Consolidated geological interpretation is shown in Figure 8 below. The geological interpretation for the Irumafimpa vein system is also shown to the right of Kora Consolidated and includes the mineral resource wireframes for Irumafimpa's M5 and P2 Lodes. Previous Kora,-Eutompi-Kora North resource areas are shown outlined prior to the generation of the Kora Consolidated interpretation. The Kora North and Irumafimpa workings are also shown. To date Kora Consolidated is defined by drilling and development from approximately 58,200mN to 59,400mN.

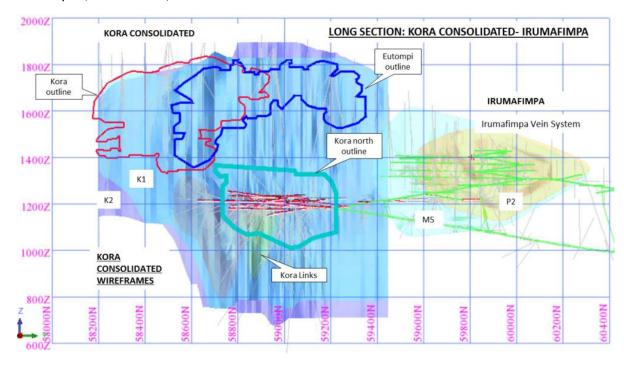


Figure 8. Long section looking from east to west of the Kora Consolidated-Irumafimpa vein system.

### 7.8 JUDD VEIN SYSTEM

Judd is a narrow, low sulphidation epithermal vein located approximately east of and parallel to Kora Consolidated on ML150. It was partially tested by Barrick holes that were drilled to test the Kora Consolidated lodes at depth. This sporadic drill testing on the Judd lodes returned a maximum intersection of 3m @ 278g/t Au. Core samples illustrate two types of Judd vein mineralization, a quartz dominant, Au-rich component and a sulphide dominant, Cu-rich vein style (Figure 9). Surface mapping and sampling has indicated a mineralized strike length of over 2.5 km.





BKDD0002 126.3 – 127.3m 0.9 g/t Au, 69.8 g/t Ag, 7.49 % Cu

BKDD0002 113.6 -114m 1,870 g/t Au

Figure 9. Judd mineralization styles

(sulphide dominant elevated copper grades, left photo and quartz dominant gold enriched on the right)

K92ML has carried out mining on what it has interpreted as one of the veins of the Judd Vein system, at depth proximal to its Kora North workings. To date, samples have been taken from 15 face cuts, for a total of 57m. The drive was put on hold by K92ML pending drilling which is planned in the future. The highlight of the face channel sample results was an intercept of width 2.4m @3.71g/t Au, 14.81g/t Ag and 1.26% Cu. Figure 10 below is a plan of 1185 level drive development at Kora North, highlighting the Judd vein. Recently K92ML has carried out diamond drilling to the south of the Judd drive and found the extension to the Judd drive mineralization. JDD0001, from 104 to 109.1m, intersected 5.07m true width @ 1.01g/t Au, 5g/t Ag and 0.19% Cu. Figure 11 is a schematic oblique view with the interpreted mineralised envelopes of Kora Consolidated and Judd veins based on K92ML and Barrick data.

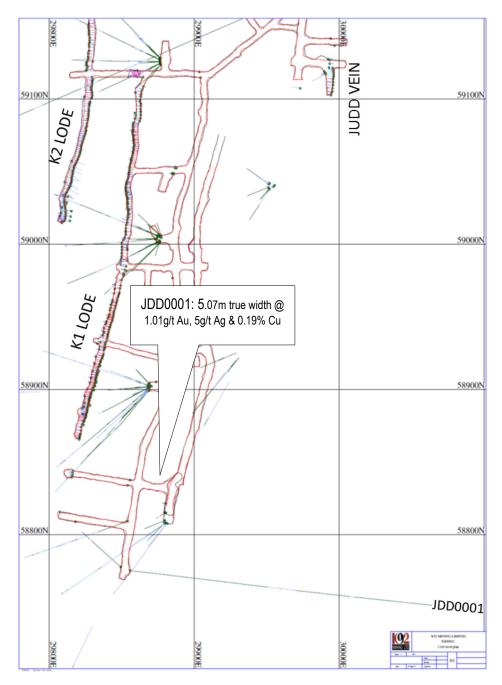


Figure 10. 1185 level plan showing the Judd Vein Drive, K1 and K2 of the northern Kora workings

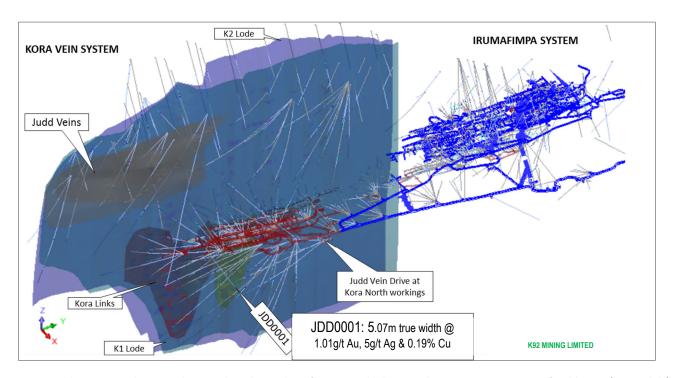


Figure 11. Oblique view schematic showing the relationship of K92ML Judd drive working to interpretations of Judd veins (grey solids) and the Kora Lodes

### (interpreted from K92ML and Barrick drill data)

Since September 2018, K92ML has conducted diamond drilling from the surface, on its ML150 mining license, primarily to test the mineralization below Eutompi and above the northern Kora resource. 10 of these surface holes intercepted the Judd vein lodes in several places between 103m to 237m down hole. The highlight of the Judd intercepts from the surface drilling was EKDD0002, yielding 4.23m (true width) @ 4.98g/t Au, 17.22g/t Ag and 0.02% Cu from 131m. Results are tabulated in Table 14. The Judd system is open down dip and along strike both in the gri north and south directions, as shown in Figure 11.

Table 14. Significant drill intersections Judd Vein

Hole_id	From (m)	To (m)	Interval (m)	True width (m)	Gold g/t	Silver g/t	Copper %	Gold equivalent	Metergrams
EKDD0001	109.10	112.40	3.30	2.11	0.20	8	0.33	0.81	0.43
EKDD0002	131.30	136.00	4.70	4.23	4.98	17	0.02	5.22	21.06
EKDD0005	148.00	150.00	2.00	1.40	2.64	1	0.00	2.65	3.69
EKDD0005	208.10	208.90	0.80	0.56	0.62	22	3.11	5.66	0.35
EKDD0007	207.40	208.00	0.60	0.42	0.25	20	1.13	2.23	0.10
EKDD0008	192.56	192.82	0.26	0.18	0.63	3	0.28	1.10	0.11
EKDD0009	150.88	153.25	2.37	1.66	0.78	8	0.45	1.57	1.30
EKDD0011	144.00	148.00	4.00	2.80	0.68	2.36	0.04	0.76	1.89
EKDD0011	156.00	158.62	2.62	1.83	0.11	6.32	0.33	0.71	0.21
EKDD0011	225.00	226.00	1.00	0.70	0.21	4.70	0.15	0.51	0.15

EKDD0011	231.10	233.30	2.20	1.54	0.26	8.18	0.18	0.63	0.40
EKDD0014	103.00	105.28	2.28	1.60	7.01	8.46	0.03	7.17	11.19
EKDD0016	237.00	237.75	0.75	0.53	1.69	2.00	0.03	1.76	0.89
EKDD0017	204.65	206.00	1.35	0.94	0.50	10.07	0.33	1.13	0.47

#### 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; Corbett, 2009):

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

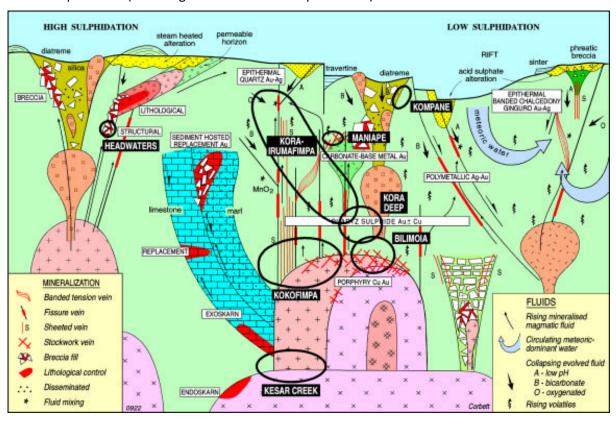


Figure 12. Conceptual model for porphyry and related low and high sulphidation mineralization.

Source: modified by K92ML after Corbett 2009

Telescoping may overprint the varying styles of low sulphidation gold mineralization upon each other or upon the source porphyry intrusion. Some of K92ML's Kainantu prospects occur in Corbett's model and are highlighted in Figure 12.

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 alerted breccias, is

consistent with a protracted history of activity. The (17-13 Ma) extended age of Akuna intrusions provides for batholitic 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 to be 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

#### 9.1 HISTORIC EXPLORATION

Historic exploration on ML150 (Irumafimpa, Kora, Judd, and Kerempa) 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" dated 15 April, 2016 and in Section 6 of the Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 30 September 2018 which are filed on SEDAR.

### 9.2 EXPLORATION BY K92 MINING 2015-2020

# 9.2.1 Summary

In September 2016 K92ML recommenced underground exploration work targeting the Irumafimpa deposit and the Judd vein system.

In May 2017 underground drilling by K92ML commenced at Kora North. Diamond drill hole, KMDD0009, intersected what K92ML interpreted as an extension of the Kora/Eutompi vein system approximately 130 metres from the Kora Drive. Following discovery of the Kora North deposit and delineation of the initial resource the emphasis of K92ML's drilling to extend the Kora North mineralization above and below the current 2018 Resource.

Within EL470 surficial Au-Ag-Cu mineralization, was identified in the Blue Lake area during September 2017. Follow up work revealed a substantial coincident geological, geochemical (Au-Cu) and geophysical anomaly now considered a top priority mineralised porphyry target. An initial program of ten diamond drillholes has been completed. The first drill hole, KTDD0001, returned an open-ended intercept of 174.6m @ 0.28 g/t Au, 0.22 % Cu, from 259.3m.

K92ML's exploration team has prioritised several targets (listed below in Table 15 ) for follow-up work.

Table 15. K92ML Priority Exploration Targets 2020.

Porphyry Targets	Epithermal Targets/Deposits
Tankaunan	Irumafimpa Extension (Kokomo)
Kokofimpa	Kora
Timpa	Judd
A1 (Headwaters)	Karempe
Blue Lake	Maniape
Efontera	Arakompa
Kathnell	Mati / Mesoan
Yompossa (Yanabo)	
Aifunka	

# 9.2.2 ML 150 (Kora-Eutompi)

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 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 the Kora North deposit because of logistics, higher grades of gold and copper and improved processing properties of the ore material.

In May 2017 K92ML commenced underground diamond drilling at Kora North. 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 what was the currently defined Inferred Resource of the Kora deposit (see Section 6.6). Follow-up drilling expanded the discovery such that a Kora North resource could be delineated in September 2018

In June 2019 surface diamond drilling commenced targeting above the Kora North resource and below the Kora/Eutompi resource (the so-called Kora Gap).

K92 Mining Limited's previous underground diamond drilling is listed in 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 and the Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits dated 30 September 2018 which are filed on SEDAR. This chapter covers the period from September 2018 to end of March 2020 period.

To the end of March 2020, 96 holes had been drilled by K92 from underground for 21,224.5m, plus 7 diamond wedge holes for 935.2m. Surface drilling by K92ML (Figure 14), targeting below the Eutompi Resource and above the October 2018 Kora North resource, totalled, 16 holes for 7,390m, plus 3 wedge holes for 719.7m. Underground face samples from drive development, along the K1 and K2 Lodes, totalled 312 faces of average width 5.13m, for a total of 1,657.5m, from 1,013m of ore drive development. Drilling has been carried out on both 25 and 100 metre centres from the Kora Incline, the 1150 Decline, the 1205 footwall drive and from diamond drill cuddies along the 1185 footwall drive, approximately 125 metres apart.

Company	Year		Lo	ocation	Туре		Hole Nos		Metre	s	Ave length	
Damid.	2000	2045	Sı	urface	DD		24		1069	90	445.42	!
Barrick	2008-2	2015	U	G	DD		6		808	3	134.67	,
Highlands others,			Sı	urface	DD	79			1659	96	210.08	3
Kora/ irumafimpa/other	1990?	- Oct2007	U	G	DD		562		2651	4	47.18	
ML150		(i		rumafimpa)	Face							
											•	
KOONAL	Oct2017-		116			DD		83		9,5	64.17	115.23
K92ML		Sept2018		UG		Face		46	1	1,4	99.28	3.25
				Surface	DD			16		7,3	90.00	461.88
K92ML		Oct2018- Mar2020		Surface		DDwe	edge	3		719	9.70	239.90
				UG		DD		96		21,	224.45	221.09

Figure 13 is a schematic longitudinal section showing the location of the Kora Gap diamond drilling.

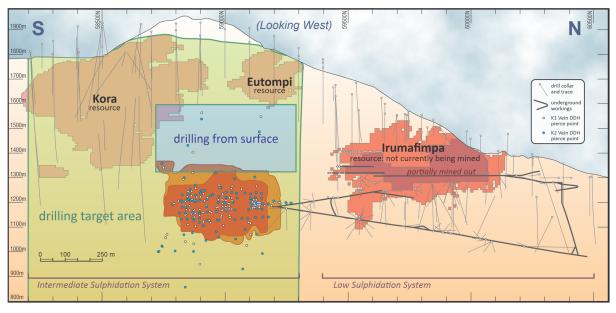


Figure 13. Mine Lease Long Section – Irumafimpa, Kora and Eutompi and Kora Gap drilling

Source: K92ML (2020)



Figure 14. ML150 View of Kora Gap surface diamond drilling

Source: K92ML (2020)

The Kora Vein structure extends ~1km beyond the mining lease boundary (but within K92ML's exploration licenses) towards grid south. The Kora South prospect has numerous artisanal workings and mineralized outcrops.. The target has not previously been drilled but drill testing is proposed for 2020.

# 9.2.3 EL470

### 9.2.3.1 Blue Lake (Kotampa Project)

Surficial Au-Ag-Cu mineralization, associated with enargite-bearing breccia and vuggy silica, was identified by K92ML geologists in the Blue Lake area (EL470) during September 2017. Detailed mapping, rock chip and soil sampling revealed a substantial (1.2 x 0.8 km) coincident geological, geochemical (Au-Cu) and geophysical anomaly which is considered a top priority mineralised porphyry target by K92ML geologists.

Drilling in 2019 to depths of 600 metres through the centre of the primary geochemical anomaly at Blue Lake identified extensive Au/Cu mineralized propylitic alteration beneath an advanced argillic lithocap, and possibly surrounding a deeper potassic zone with potentially associated gold-copper mineralization at depth. Additional drilling to more closely delineate the lateral extent of the propylitic mineralized shell is planned in 2020 followed by deeper targeted drilling to locate a deeper potassic core.



Figure 15. View towards Blue Lake Porphyry Project Area

Source: K92ML (2020)

The first drill hole, KTDD0001, returned an open-ended intercept of 174.6m @ 0.28 g/t Au, 0.22 % Cu, from 259.3m and was terminated in mineralization at 433.9m.

Assessment of drillcore by independent consultants support the conclusion that there is a major intrusive complex at the Blue Lake prospect with a flow-banded fractured dacitic dome cut by hydrothermal breccias and late mineral porphyritic dacite dykes. Many features in the drillcore are typical of those expected in a porphyry environment marginal to a speculated buried intrusion source (Corbett, 2019).

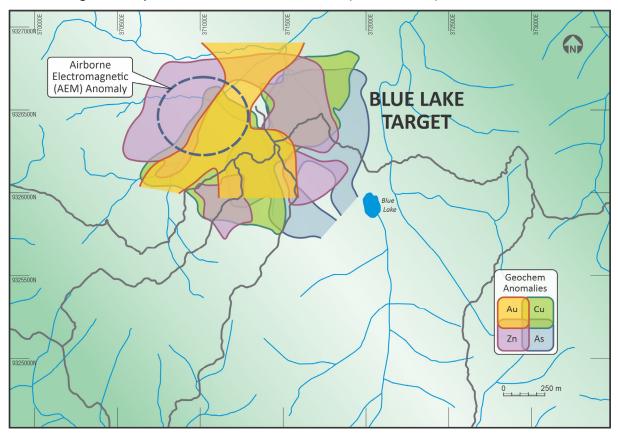


Figure 16. Plan View of Blue Lake prospect

Source: K92ML (2020)

# 9.2.3.2 Karempa Project

At the Karempa prospect just outside the western boundary of ML150 reconnaissance mapping and sampling has commenced, and drill testing is proposed. High grade gold mineralization is hosted in granitoid.

Anomalous geochemical and geophysical indicators (potassium anomaly, strong conductivity) for Kora–style mineralization have been located (Figure 17).

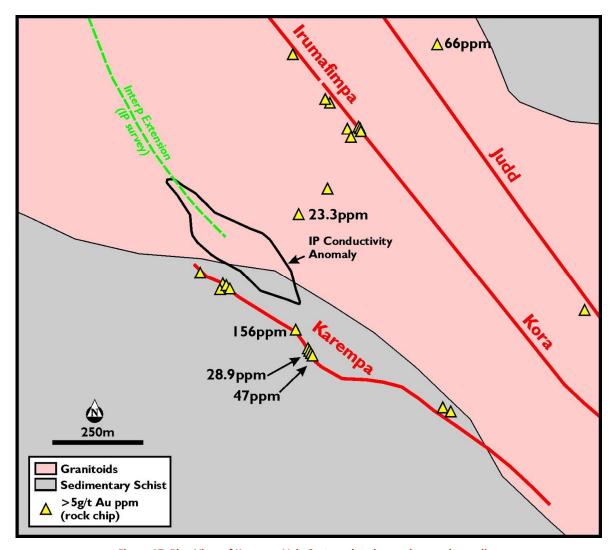


Figure 17. Plan View of Karempa Vein System showing geology and sampling

Source: K92ML (2020

# 9.2.4 EL1341

In 2019 a five-hole drilling program was completed at Yompossa (Yanabo) on EL1341, with high level porphyry-style alteration and low grade Au/Cu mineralization intersected. Geochemical vectors towards a possible deep mineralised porphyry have been identified.

## 10 DRILLING

# 10.1 KORA CONSOLIDATED- DRILLING

The updated Mineral Resources for the Kora Consolidated deposit are based on samples from diamond drillholes (surface and underground) and face sampling of underground development drives.

Table 17 provides summary details of the sampling for the overall deposit area. The vast majority of the K92ML drilling has been on the Kora North section of the mineralisation.

**Table 17. Summary Details of Sampling Methods** 

Company	Year	Location	Туре	No of Holes	Metres	Ave Length (m)
Barrick	2008 - 2015	Surface	DD	24	10,690	445.4
		UG	DD	6	808	134. 7
Highlands & Others	1990 - 2007	Surface	DD	79	16,596	210.1
	(Irumafimpa)	UG	DD	562	26,514	47.2
			Total	671	54,608	
K92MI	Oct 2017 - Sept 2018	UG	DD	83	9,564.2	115.2
			Face	461	1,499.3	3.3
K92ML	Oct 2018 - Feb 2020	Surface	DD	16	7,390.0	461.9
			DDwedge	3	719.7	239.9
		UG	DD	96	21,224.5	221.1
			DDwedge	7	935.2	133.6
			Face	312	1,657.5	5.31
		Total Drilling		213	41,079.6	
		Total Face S	ampling	773	3,156.7	

(DD = diamond drilling; UG = underground)

The underground diamond drilling programs for Kora, Eutompi and Kora North deposits utilised two owner operated LM90 drill rigs as well as using rigs supplied by Quest Exploration Drilling (QED) Contractors (PNG). QED provided two drill rigs, namely the Atlas Copco Diamec U4 and U6 drilling machines for this purpose. QED also carried out the surface drilling using Atlas Copco CS6 and CS1000 rigs.. All drilling was carried out on a 12-hour shift basis, both day and night shifts in order to meet production demands.

The underground diamond drilling utilisess several core sizes, namely LTK60, NQ, NQ2 and HQ. For the surface drilling all holes were collared to various depths in PQ with HQ and NQ used to get competent samples through the lode system.

K92ML has an established drilling protocol in which the driller prior to drilling is given a drill hole work plan specifying the expected lode target positions, hole depth, azimuth, dip, core size and drilling method to use. All drilling 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 collar positions are 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 a 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 measured 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 for the underground drilling as the results of the closed spaced drillholes clearly showed the geological continuity of each lode. However, core orientations were performed for HQ and NQ core on the more widely spaced holes drilled from surface.

Diamond core was laid out in the core trays by the drilling contractor, beginning 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 predefined codes, in particular for lithology, alteration, veining and sulphide mineralogy.

K92ML has a standard underground face sampling procedure in place. In this reporting period from the last resource estimates in Oct 2018 to March 2020, 1,013 m of development took place along the K1 and K2 Lodes. Face sampling and mapping is done after each cut along the drive, with the cut interval along the drive being nominally 1.5m using an airleg or 3.5m using Jumbos. The face geological mapping and channel samples are taken across the strike of the vein system, at right angles to the drive.

The Barrick/Highlands drilling was reviewed and endorsed by Nolidan Mineral Consultants in 2015. Drillcore handling and sampling procedures used by Barrick are reported in Section 11.2.

# 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 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. In this reporting period, since the previous resource estimates in October 2018, recovery analysis used holes KMDD0103 to KMDD0212 and EKDD0001 to EKDD0017.

Figure 18 shows the gold grade versus recovery for the drillhole dataset (since the October 2018 resource estimates) for the K1 Lode and indicates there is no bias 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%. .

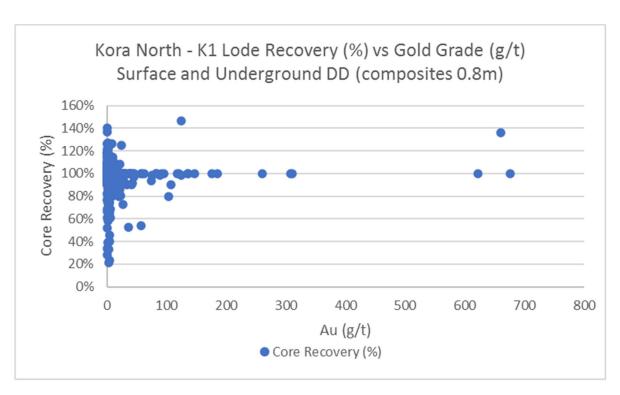


Figure 18. K1 Lode intercepts Gold versus Core Recovery

Figure 19 shows the gold grade versus recovery for the entire drillhole dataset for the K2 Lode and indicates there is no bias with core recovery and gold grade.

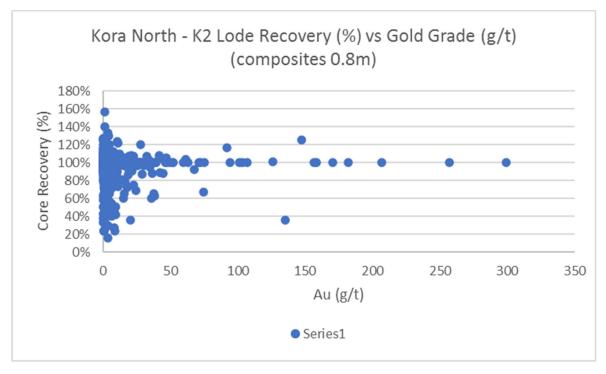


Figure 19. K2 Lode intercepts Gold versus Core Recovery

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 HIGHLANDS PACIFIC

No documented procedures are available for review.

### 11.2 BARRICK

The drill core handling procedures used by Barrick were reported by Nolidan Mineral Consultants in 2015. His findings are as follows: "All drill core was logged, photographed (wet and dry), then cut and sampled at Barrick's Kumian core yard. Logging data entry was completed using an in-house developed version of the AcQuire software. After logging, core was half-cut using diamond saws, and continuously sampled into numbered calico sample bags. The samples were submitted to the sample preparation facility of Intertek Laboratory Services in Lae (PNG). Sample preparation involved drying the samples at 105°C, crushing in a jaw crusher with 95% of the sample passing <2mm, riffle splitting and pulverising to 95% passing <75µm."

#### 11.3 K92ML

## 11.3.1 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. Unmineralised areas at the start of the hole, at the end of the hole and between lodes was usually left unsampled. All mineralised occurrences were sampled.

Sampling of the core involved sawn half core cut along the reference line. For LTK60, NQ, NQ2, HQ and PQ 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 managed by Intertek Testing Services (PNG) LTD, an independent accredited laboratory.

Face samples, under geological control, were taken across the full face of both the exposed lode system and any waste rock, 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. Two samples are taken per interval with the samples assayed separately for Au, Cu and Ag and the results averaged out using length weighting and channel orientation before entry into the database.

K92ML has a documented QAQC procedure that included the insertion standards, blanks and duplicates into the sample suite for each hole (for all drilling since 2017) and for the face sampling (since Oct 2019).

**Table 18. Definition of QAQC Terms** 

Item	Description
Standard	A Certified Reference Material (CRM) used to measure accuracy of the sample prep and analysis of the samples.
Blank Standard	A sample with nil or negligible (i.e., undetectable) concentration of the tested element(s). Blank standards are used to monitor for contamination at the various stages of processing and assaying.
	A second drillhole sample collected in the field.
Field Duplicate	This sample provides a measure of the homogeneity of the sampled material, short scale grade continuity
Laboratory	This sample provides a check on sample homogeneity from the sample prep stage and the repeatability of the sample extraction.
Duplicate '	Sample collected as a sub-sample of the originally submitted 2-3kg sample after crushing and pulverizing. Sometimes referred to as a pulp duplicate
2 <sup>nd</sup> Lab Checks	Check assays on all shipments are yielded from samples submitted to more than one laboratory (organization) for validation of consistency. Sometimes known as umpire lab checks
Laboratory Replicate	A second measurement (often analytical reading) of the same sub-sample after sample digest; a check for sample prep homogeneity and machine calibration.
Twin Halo	A repeat hole located in very close proximity to an original hole ie <5m spatial difference.
Twin Hole	It is used to validate the primary drilling and a check that the sampling is representative and provides a measure of short scale grade continuity.

# 11.3.2 Sample Preparation

Intertek Laboratory services provides on-site laboratory facilities. The sample preparation for both the drill core 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 in 30

# 11.3.3 Density Measurements

# 11.3.3.1 Historic Density Measurements

Previous density testwork is summarized in the Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Irumafimpa and Kora Gold Deposits, Kainantu Project, Papua New Guinea, 02 March 2017 (Woodward, A.J., Desoe C., and Park L.J., 2017).

During the initial 2002 feasibility study HPL carried out density determinations on 35 samples sourced predominantly from the Irumafimpa exploration adit. Density of these samples ranged from 2.9 t/m³ to 3.7 t/m³. HPL used a default density of 2.9 t/m³. This incorporated a correction for voids which constitute approximately 10% of the total volume of the Irumafimpa lodes (SRK, 2006). Historic resource estimates by Hackchester (2005) and Mining Associates (2006) used an average density value of 2.9 t/m³.

Barrick made 428 density measurements of drillcore from Kora. These were mostly waste material but included 5 intersections of the interpreted Mill and Robinson veins. Densities were determined using the water immersion

method (Bond, R., Dobe, J., & Fallon, M., 2009). Average values from measurements for lode material ranged from 2.58 t/m<sup>3</sup> to 2.77 t/m<sup>3</sup>.

In the 2015 resource estimate vein blocks in the Irumafimpa deposit were assigned a density of 2.9 t/m³ and vein blocks in the Kora deposit were assigned a density of 2.8 t/m³.

In 2018 density testing of core from diamond drilling at Kora North consisting of 154 samples concentrated on the mineralised zones. This used the geologists' discretion to take representative core samples of the lodes and were usually between 3-10cm in length. Samples were taken across the K1 and K2 lodes. In the K1 Lode there are two sub-lodes K1 East and K1 West occurring in but on the footwall and hanging wall sides of the broader K1 Lode, these areas were determined separately and as one. This work indicated an average density of 2.8t/m³ however, samples tested were spatially limited in their extent.

# 11.3.3.2 Current Density Measurements

Density results since the last Resource October 2018 up to March 2020 were summarised for K1 and K2 Lodes. Density test samples are selected by the geologist during the logging process. Samples were dried in the oven at 100 degrees Celsius, weighed dry then weighed while submerged in water, then weighed after the submersion in water and moisture content and density calculated. Typically, 95% of the time moisture content was less than 1% by weight. Results of the density tests were entered into the Access database and using Surpac software the density results were extracted as sample points from the database within each of the Lodes, K1 and K2. Results of the density testing statistics are summarised in Table 19 below for the K1 and K2 Lodes. The work suggests, the average density value for K1 Lode is 2.84t/m³ and for K2 Lode is 2.93t/m³.

Table 19. Density Statistics K1 and K2 Lodes

K1 Lode Density Statistics 2019-2	2020 year	K2 Lode Density statistics 2019-2020 year		
Mean	2.84	Mean	2.93	
Standard Error	0.04	Standard Error	0.05	
Median	2.70	Median	2.83	
Mode	2.76	Mode	2.20	
Standard Deviation	0.51	Standard Deviation	0.47	
Sample Variance	0.26	Sample Variance	0.22	
Kurtosis	2.69	Kurtosis	-0.61	
Skewness	1.27	Skewness	0.64	
Range	3.33	Range	1.90	
Minimum	1.91	Minimum	2.20	
Maximum	5.24	Maximum	4.10	
Sum	411	Sum	240	
Count	145	Count	82	

In summary historic density has ranged from values of between 2.58 to 3.7t/m3. In 2019-2020 the density test results on core remained with these bounds. More work needs to be done, with the use of bulk density test

parcels of known volume processed through the on- site plant and the dry bulk density determined by using the processed tonnes divided by the volume of that parcel. Several parcels should be tested in this fashion, representing bulk samples from different parts of the deposit.

The drill core density test results are limited because of the inherent bias toward the testing of intact segments of core. Some of the core taken from the mineralised zones is in a friable/ broken state and because of this condition it is uncertain of the accuracy of the density test results on these sections of core.

## 11.3.4 Sample Anaysis

The analytical method is detailed as follows:

#### 11.3.4.1 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)

# 11.3.4.2 Cu/Ag

- 3 acid digest at 180°C.(Nitric, Perchloric & Hydrochloric mix).
- Diluted with water and read by AAS

#### 11.3.4.3 CS

• Read by combustion furnace.

## 11.3.4.4 Fluorine

Following a carbonate fusion samples are read on a specific ion meter referenced against standards.

# 11.3.5 QAQC Program - Diamond drilling

K92ML's documented QAQC programme for the drilling comprises standards, blank standards, lab duplicates, and 2<sup>nd</sup> lab checks. The face sampling prior to September 2018 had no QAQC samples inserted although the sample suites were inserted in between drillhole sampling suites. From September 2018 onwards the same QAQC protocols were applied to the face sampling.

### 11.3.5.1 Standards

Three standards were purchased from Geostats Pty Ltd and are certified for gold only. The three standards G312-5, G915-2 and G916-6 correspond to low, medium 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. Details of the standards are in Table 20.

Four standards for copper and silver were purchased from Geostats PTY LTD. The standards used were, GBM315-10 (low copper value), GBM910-4 (medium copper value), GBM910-6 and GBM303-6 (high copper values).

As professionally prepared standards could not be hidden amongst the core samples they were submitted routinely as the 22<sup>nd</sup> sample in the sample sequence to the onsite laboratory (Intertek Laboratories). This meant that at least 2 standards were used for each hole.

Table 20. Details of Standards used in Diamond Drilling QAQC

Standard	Certified Au g/t	Certified Cu ppm	Certified Ag ppm	No of Samples
G312-5	1.6			100
G915-2	4.98			92
G916-6	30.94			52
GBM315-10		2646	4.7	74
GBM910-4		5412	1.8	104
GBM910-6		10084	3.6	95
GBM303-6		13967	5.5	86

The results in Figure 20 for the low grade gold standard show that there appears to be small scale biases associated with time but none of the biases are considered significant. Figure 21 shows there are no accuracy issues with the medium grade gold standard and Figure 22 suggest there is slight over-reporting of the high grade gold standard but it is within an acceptable level (the sample\_id on the x-axis corresponds to the date of analysis. The + and - 10% of the CRM value are also plotted on the graphs for accuracy assessment purposes).

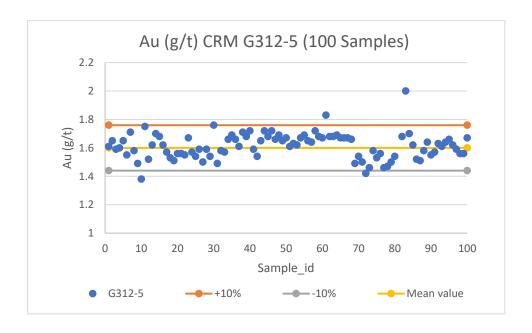


Figure 20. Low Grade Gold Standard Results

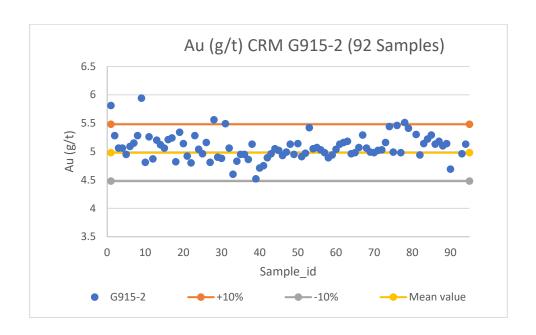


Figure 21. Medium Grade Gold Standard Results.

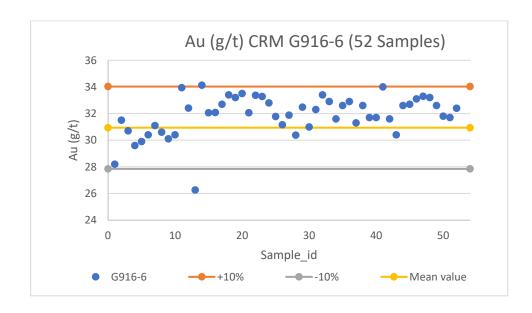


Figure 22. High Grade Gold Standard Results.

Figure 23 shows the analytical results for the high grade copper standard where there is a moderate negative bias in the copper data with the assays under reporting by 5-6%. There appears to be no bias with time.

The silver results, whilst there appears to be no bias, are more ambiguous as they are reasonably close to the lower detection limit and possibly the limitations of the lab analytical process.

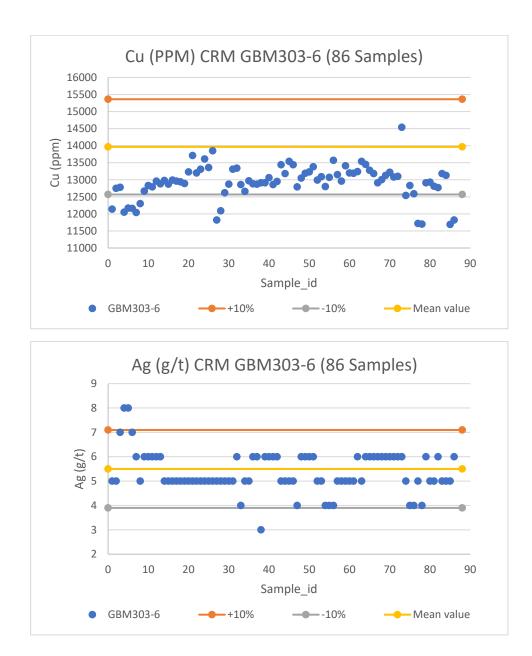
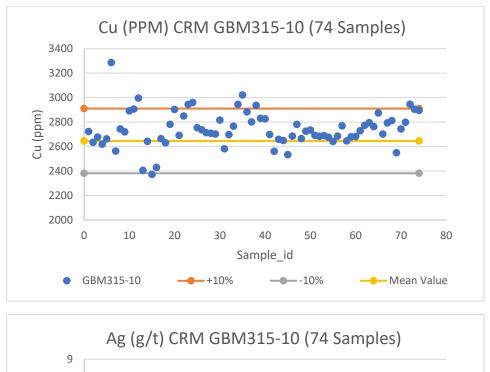


Figure 23. GBM303-6 Standard Results for Copper and Silver

Figure 24 shows the analytical results for the low grade copeer and silver standard and that there is a small positive bias in the copper data with the assays over reporting by 2-3%. There appears to be no bias with time. The silver results, whilst there appears to be no bias, are more ambiguous as they are reasonably close to the lower detection limit and possibly the limitations of the of the lab analytical process.



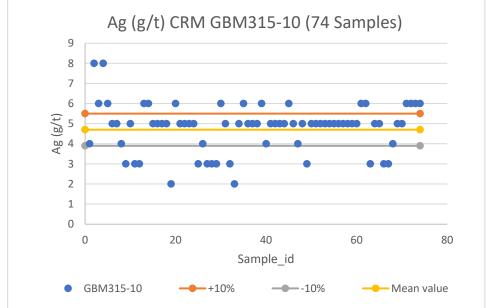


Figure 24. GBM315-10 Standard Results for Copper and Silver.

Figure 25 shows the analytical results for the medium to low grade copper and silver standard and that there is a small negative bias in the copper data with the assays under-reporting by 2-3%. There appears to be no bias with time. The silver results, whilst there appears to be a slight positive bias, are more ambiguous as they are reasonably close to the lower detection limit and possibly the limitations of the of the lab analytical process.

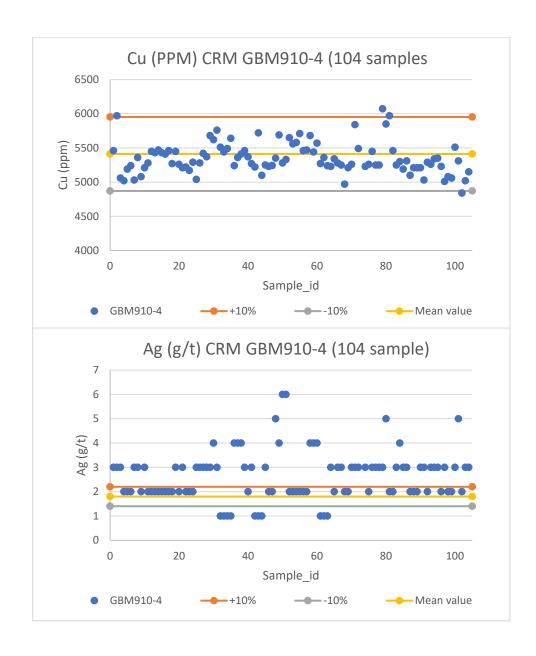


Figure 25. GBM9105-4 Standard Results for Copper and Silver

Figure 26 shows the analytical results for the medium grade copper and silver standard and that there is a small negative bias in the copper data with the assays under-reporting by 2-3%. There appears to be no bias with time. The silver results, whilst there appears to be a slight positive bias, are more ambiguous as they are reasonably close to the lower detection limit and possibly the limitations of the of the lab analytical process.

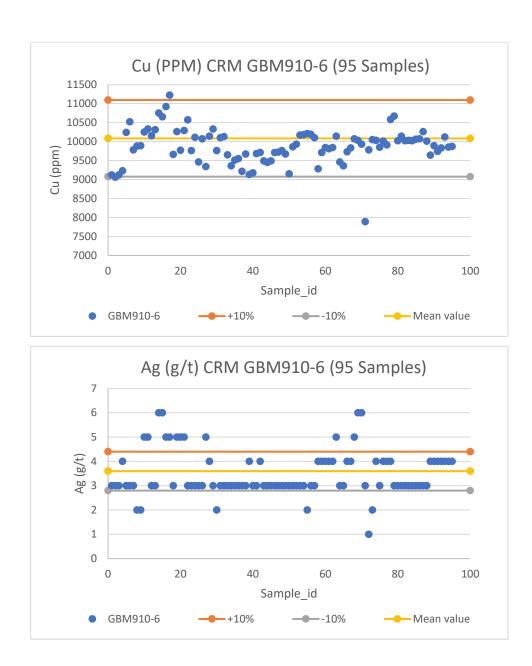


Figure 26. GBM910-6 Standard Results for Copper and Silver

## 11.3.5.2 Blank Standards

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 demonstrate its suitability as a blank prior to its use.

In total 980 blanks samples were submitted from September 2018 to March 2020. Results for the blank assaying are within acceptable limits of variation and are continually being monitored. Blank results greater than 0.1g/t gold came to 2% of all blanks submitted, nevertheless, the reasons were investigated. Two of the elevated gold blank values > 0.1g/t returned from the Laboratory had mineral sample assays greater than 1g/t before them in the sample sequence, 9 blank values had samples before them > 0.1g/t and the remaining 8 samples had values <0.1g/t before them. This suggests that the Lab infrequently has minor contamination between samples, an issue that needs improvement.

There appeared to be no significant issues for copper.

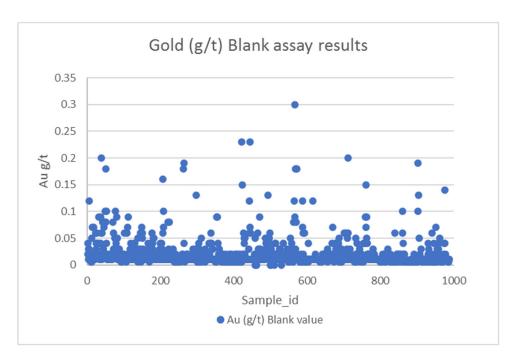


Figure 27. Blank material results for gold

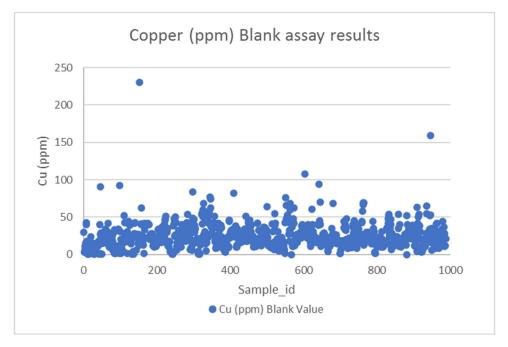


Figure 28. Blank material results for copper

# 11.3.5.3 Lab Duplicates

Lab (or pulp) duplicates were inserted every 23<sup>rd</sup> sample in the sample submission sequence for the diamond coresamples.

The results of the gold pulp duplicates showed a good match with the original sample with no evidence of any bias (Figure 29).

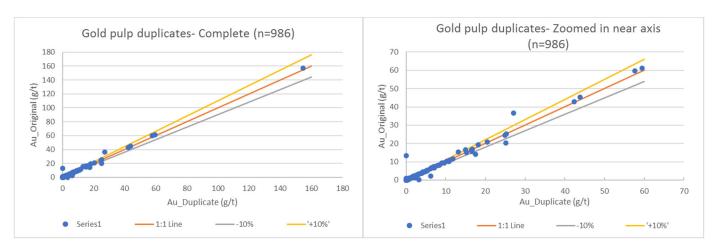


Figure 29. Drilling Lab duplicates Gold

The results of copper pulp duplicates showed a good match with the original sample with no evidence of any bias (Figure 30).

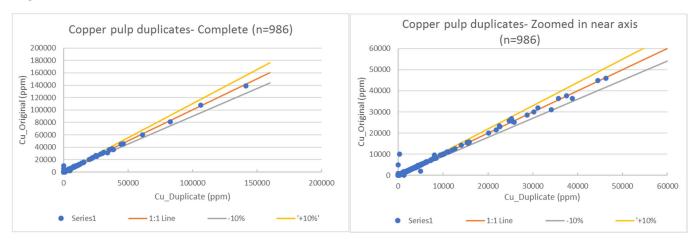


Figure 30. Drilling Lab Duplicates Copper

The results of silver pulp duplicates showed a reasonably good match with the original sample with no evidence of any bias (Figure 31.). The bigger scatter with higher silver grades is noted, but has no obvious no bias.

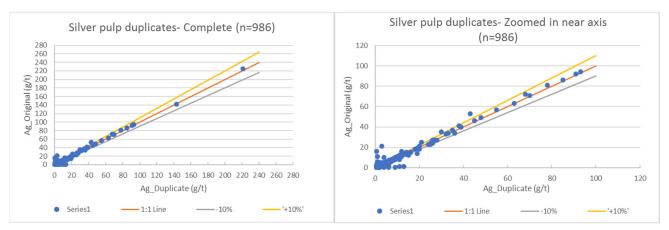


Figure 31. Drilling Lab Duplicates Silver

## 11.3.5.4 Check Assays

A program of check assaying was carried out by K92ML between September 2018 and March 2020 whereby two series of 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. No face samples were in the check sequence.

Check sampling is now a routine process completed on a 6 month cycle.

Figure 32 shows there are no biases of gold associated with the data which indicates the analysis is accurate and that the sample prep has produced homogenous samples.

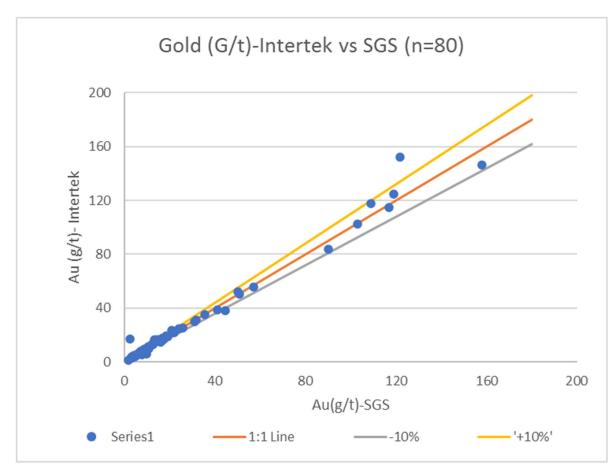


Figure 32. 2<sup>nd</sup> Lab Check analysis Gold

Figure 33 shows there are no biases of copper associated with the majority of the data which indicates the analysis is accurate and that the sample prep has produced homogenous samples. However, there appears to be a slight positive bias for the check sample at copper grades above 6%. This is not considered significant.

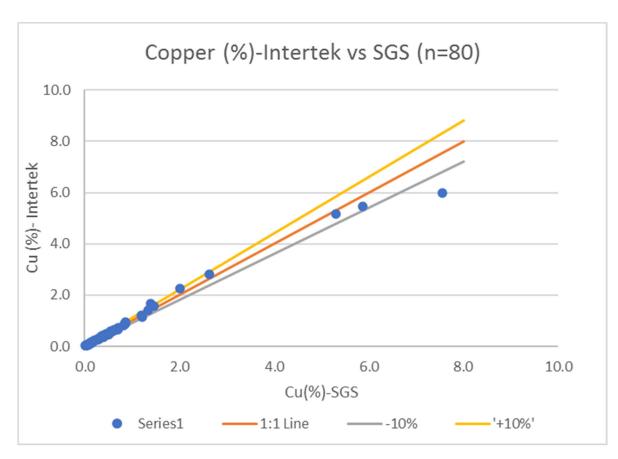


Figure 33. 2<sup>nd</sup> Lab Check analysis Copper

Figure 34 shows no significant biases of silver associated with the data which indicates the analysis is accurate and that the sample prep has produced homogenous samples

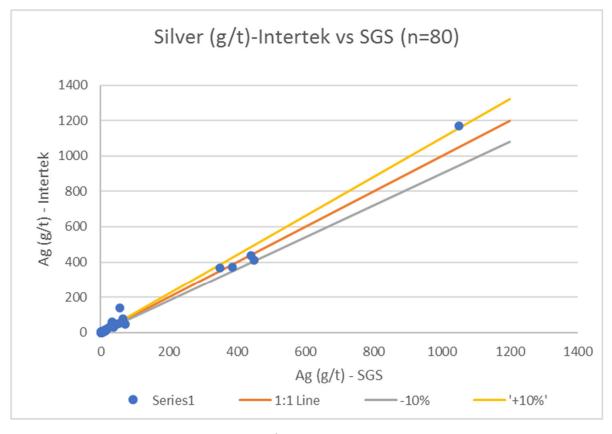


Figure 34. 2<sup>nd</sup> Lab Check analysis Silver

To conclude, the results obtained from the SGS check assays indicate that the Intertek assays are repeatable which gives a reasonably high level of confidence in the Intertek assay results..

# 11.3.6 QAQC Program - Face Sampling

For the September 2018 face sampling onwards QAQC samples were routinely inserted into sample sequence by K92ML, a blank at the 21st sample a CRM at 22nd and pulp duplicates were done every 23rd sample in the sample submission sequence of the face samples. This is approximately a ratio of 5% QAQC samples of the total submitted.. No QAQC samples were inserted for the face sampling prior to September 2018.

#### 11.3.6.1 Standards

Three Gannet Pty Ltd, gold standards were used and inserted in the sample sequence at intervals of approximately every 22nd sample. The standards listed in Table 21 reflect a low, medium and high gold value.

Standard	Certified Au g/t	Certified Cu ppm	Certified Ag ppm	No of Samples
ST589	2.42			21
ST643	5.43			45
ST621	36.56			30

Table 21. Details of Standards used in Face Sampling QAQC

Figure 35 shows the analytical results for the low grade gold standard and that there is no obvious bias in the gold data.

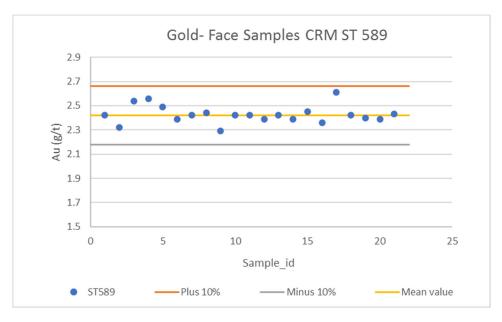


Figure 35. Low grade gold standard results9

Figure 36 shows the analytical results for the medium grade gold standard and that there is a moderate positive bias in the gold data with the assays over-reporting by 5-6%.

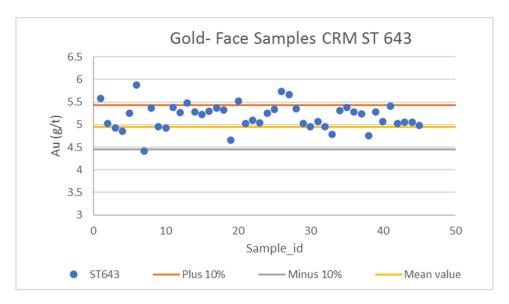


Figure 36. Medium grade gold standard results

Figure 37 shows the analytical results for the high grade gold standard and that there is a small negative bias in the gold data with the assays under-reporting by 2-3%.

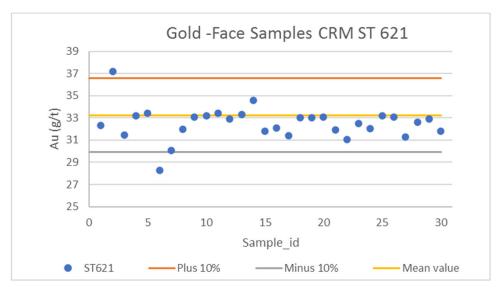
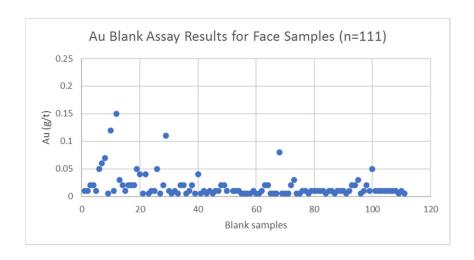
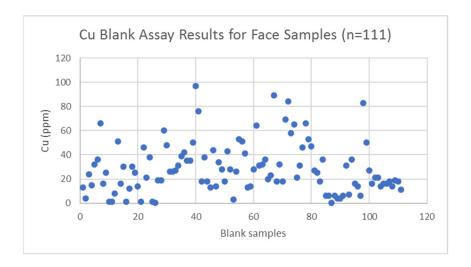


Figure 37. High grade gold standard resultst

## 11.3.6.2 Blank Standards

The same blank standard used for the diamond drilling was inserted into the face sample submissions to the laboratory. The blank results are within acceptable limits of variation, see Figure 38, below.





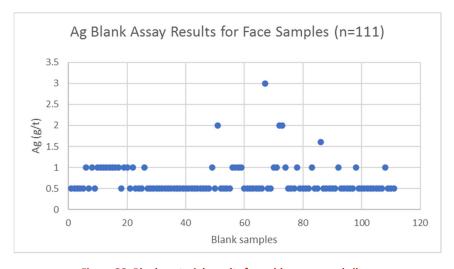


Figure 38. Blank material results for gold, copper and silver

# 11.3.6.3 Lab Duplicates

Lab duplicates (also known as pulp duplicates) cover the period from September 2018 to March 2020. The duplicate results are within acceptable limits of variation, as shown in Figure 39 to Figure 41.

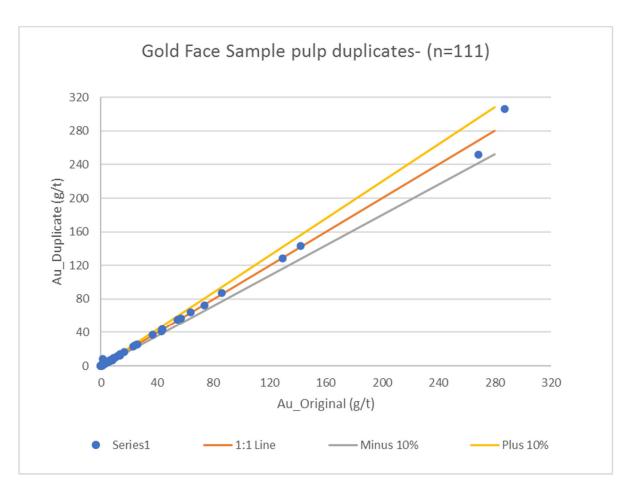


Figure 39. Face Sample Lab Duplicates Gold

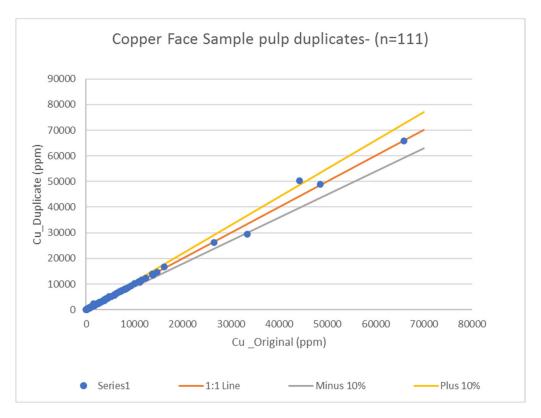


Figure 40. Face Sample- Lab Duplicates Copper

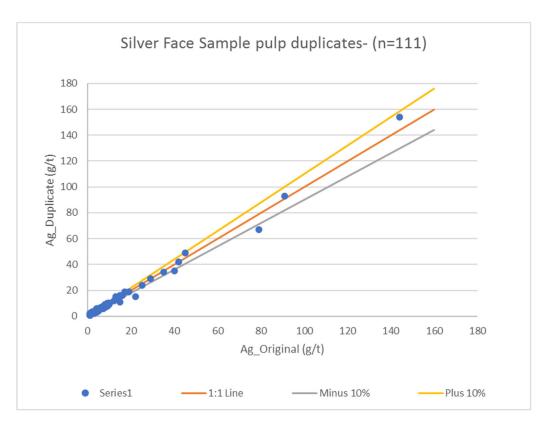


Figure 41. Face Sample-Lab Duplicates Silver

# 11.3.7 QAQC Summary

- The analytical results for the CRMs for the drilling and the more recent face sampling indicate minor positive and negative biases for gold and copper, but none of the biases are considered significant.
- The analytical results for the blank standards for the drilling and the more recent face sampling indicate
  a small level of possible occasional contamination. Further investigative work is required to better
  establish if there is any significant contamination and whether work procedures can be improved.
- The analytical results for the laboratory duplicates for both drilling and face sampling indicate no issues with the sample prep or the accuracy of the assays.
- The analytical results from the 2nd lab check sampling (drilling only) indicate no biases with the original sampling and confirm the homogeneity of the sample prep and the accuracy of the original results

The conclusion is that there are no issues with the sample preparation or assaying of the drillcore and face samples for the K92ML exploration work.

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

It is concluded that the QAQC programme is adequate and that there are no major issues with the outcomes.

#### 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 an inspection of underground workings including exploration drilling and geological assessment, an inspection of the processing plant including the on-site laboratory assay facilities, visual checks of randomly selected laboratory-issued assay sheets and a review of drillcore.

Anthony Woodward visited the Kainantu site in November 2014 while the project was on care and maintenance. In November 2016 his site visit included a visit to the rehabilitated underground workings, underground diamond drilling sites, and the treatment plant. In January 2020 Mr Woodward inspected surface drilling sites at Kora during a helicopter reconnaissance and saw drilling sites at the Blue Lake prospect. Drillcore from this work was inspected at the K92ML coreyard. He also visited underground workings and inspected exposures of the K1 and K2 lodes in the 1225, 1220, and 1170 ore drives and surface infrastructure including the treatment plant and TSF.

Chris Desoe (AMDAD) visited Kainantu site in June 2016 and January 2020. In 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. In 2020 Mr Desoe inspected the underground workings.

Lisa Parks visited the site in January 2020.

### 12.2 LIMITATIONS

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

#### 12.3 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

# 13.1 INTRODUCTION

K92-Mining engaged Mincore to prepare a report including cost estimates for a new processing plant located adjacent to the existing plant to accept ore from the Kora deposit. The design throughput for the new plant is 1Mtpa.

#### 13.2 HISTORICAL TESTWORK

Initial and limited metallurgical test work on drill core samples was carried out by Metcon Laboratories (Sydney) in 2000. This test work included gravity recovery, flotation, whole ore leaching and flotation concentrate leaching.

Two samples supplied by Highlands Pacific in March 2002 of a quartz lode were sent to AMDEL for comminution testing and HRL for metallurgical testing. Results from this testing were used for initial project feasibility study and plant design.

Test work was conducted by AMMTEC in 2009 on two composite samples. The two composites were "High Au Intervals" and "High Cu Intervals". This test work covered grind size and optimisation of flotation and gravity recovery at the particular grind size.

## 13.3 TESTWORK PROGRAM

Microscope examination of sized fractions from final flotation concentrate and tailings was conducted by Core Metallurgy in 2019/2020. Concentrate and tailings samples were supplied by K92 Mining and the focus of the analysis by optical microscopy was gold mineralogy and sulphide mineral associations. This work identified that

the rougher tail was comprised mostly of silica rich non-sulphide minerals and liberated pyrite. Gold-losses to tail were determined to be due to the inclusion of gold and gold tellurides in pyrite. It was concluded that this was the most probable source of gold flotation losses and any suppression of pyrite to the final tails would likely result in higher gold losses. The major non-sulphide components of the concentrate were quartz and muscovite.

The PNG University of Technology examined K92ML ore with regards fluorine mineral(s) and the deportment of fluorine to the final concentrate in 2019/2020. The main fluorine bearing mineral was identified as sericite. The concentration of fluorine and gold increases with finer sizes, particularly the minus 38µm size fraction. This investigation recommended further examination of the recovery mechanisms of sericite, including entrainment, natural floatability, pulp chemistry and mineral liberation and testing of alternative depressants to CMC which is currently used.

These recommendations have been incorporated in Section 13.5 - Future Metallurgical Test Work.

#### 13.4 PROCESS SELECTION AND DESIGN

#### 13.4.1 Background

Feed size in the future will probably be larger than currently received from the underground mine as the percentage of long hole stope material increases and some wider stopes are brought into production. Further it is expected that the clay content will also increase. Based on this and the operational difficulties experienced with the current crushing circuit, the comminution circuit selected for the proposed 1Mtpa treatment plant is a Primary Jaw crusher with SAG mill circuit.

Conventional flotation will follow crushing and grinding to produce a sulphide concentrate. A flash flotation cell is incorporated into the grinding circuit and the flash flotation concentrate will combine with the concentrate from the conventional flotation circuit. This concentrate will be thickened, filtered and dried before being loaded into shipping containers and transported to smelters. A gravity circuit is also incorporated in the grinding circuit to capture free gold for smelting on site to produce dore.

Design Criteria, Process Flow Diagram(s) and Mass Balance were developed as a basis for preparing the Capital and Operational Expenditure Estimates.

## 13.4.2 Design Criteria

Design criteria were developed for a nominal throughput of 1Mtpa (dry) a head grade of 0.95 % Cu and 8.84 g/t Au producing 80,000 tpa of high grade copper-gold concentrate. The design criteria are based on owners' information, current site operating experience and industry practice.

## 13.4.3 Process Flow Diagrams

Process flow diagrams have been developed covering:

- crushing & grinding and
- flotation, concentrate thickening, filtration & drying.
- plant services

# 13.4.4 Mass Balance

Mass and water balances for the process streams were developed in an MS Excel spreadsheet based on the design criteria and proposed process flow diagrams.

### 13.5 FUTURE METALLURGICAL TESTWORK

Test work is required to validate design assumptions, give greater confidence in the selection of equipment and identify operational enhancements.

This work should include:

- Testwork to determine comminution and grinding parameters covering the range of ore types expected
- SAG mill modelling work to confirm the size and configuration of the milling circuit
- Grind size optimisation testwork to establish the required mineral liberation, optimum flotation recovery versus grade and production rate
- Mineralogical analysis of current plant process steams to determine mineral liberation, identify loss of valuable product and understand the deportment of fluorine
- Examination of flotation pH and recovery to determine the optimum pH
- Reagent screening to examine alternative depressants for fluorine. Most of the fluorine is from sericite and CMC which is currently used may not be the most effective depressant.
- Investigation of any benefits from re-grinding the rougher/scavenger concentrates and cleaner tails
- Settling and filtration testwork to accurately size the concentrate dewatering equipment
- Plant investigation of gold gravity circuit efficiency.

The test work for tailings waste management plant should include:

- Settling and filtration testwork to accurately size the tailings and dewatering equipment
- Paste testwork to accurately determine measured quantities to achieve the desired density for pumping and strength.

#### 14 MINERAL RESOURCE ESTIMATES

The effective date of the MRE is the 2<sup>nd</sup> April 2020, which was the date that the latest database was received by H&SC.

The updated Mineral Resources for the Kora Consolidated deposits are based on samples from diamond drillholes and face sampling of development drives. mineralization.

Table 22. provides summary details of the sampling for the overall deposit area. The vast majority of the K92ML drilling has been on the Kora North section of the mineralization.

**Table 22. Summary Details of Sampling Methods** 

	Table 22. Summary Details of Sampling Methods					
Company	Year	Location	Туре	No of Holes	Metres	Ave Length (m)
Barrick	2008 - 2015	Surface	DD	24	10,690	445.4
		UG	DD	6	808	134. 7
Highlands & Others	1990 - 2007	Surface	DD	79	16,596	210.1
	(Irumafimpa)	UG	DD	562	26,514	47.2
			Total	671	54,608	
K92ML	Oct 2017 - Sept 2018	UG	DD	83	9,564.2	115.2
			Face	461	1,499.3	3.3
K92ML	Oct 2018 - Feb 2020	Surface	DD	16	7,390.0	461.9
			DDwedge	3	719.7	239.9
		UG	DD	96	21,224.5	221.1
			DDwedge	7	935.2	133.6
			Face	312	1,657.5	5.31
			Total Drilling	213	41,079.6	
		Total	Face Sampling	773	3,156.7	

(DD = diamond drilling; UG = underground)

The MRE for the Kora Consolidated deposits 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 Consolidated deposits is relatively straightforward. A 3D interpretation of geological domains as wireframes for the K1, K2 and 3 Kora Link lodes was completed using the Surpac software. These wireframes were then 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 eight search domains for each lode, based on subtle variations in dip and strike of the lodes with the resulting 3D models loaded into a Surpac block model. Post-modelling processing, including block model validation and reconciliation, was undertaken in Surpac. 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.

The MRE reported in this section have been classified under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves.

#### 14.1 SUPPLIED DATA

H&SC was supplied by K92ML the following items:

- A drillhole database in Access for direct use in Surpac. Drillhole data comprises surface and underground diamond cored holes and face sample lines from the current underground mining.
- 3D wireframes for topography, the underground development and the stope solids generated from mining.
- Mill production figures.
- A suite of reports covering previous drilling and resource estimation for the Kora deposit by Mining Associates and different aspects of the underground drilling for Kora North e.g. analysis of recovery, density data, QAQC procedures and outcomes.

A database summary is presented in Table 23, showing the data provided for a range of items.

Number of holes with records Item **DD Holes Face Samples** Records Collar 266 60,443m Collar 837 3,276m Survey 266 837 7,863 266 837 41,136 Au g/t 783 Cu % 266 28,950 266 789 38,406 Ag g/t Lith 261 0 14,519 207 0 Altn 7,947 Min 207 0 7,947 **RQD** 167 0 31,161 105 0 2,053 Density

**Table 23. Database Summary** 

#### 14.2 GEOLOGICAL INTERPRETATION

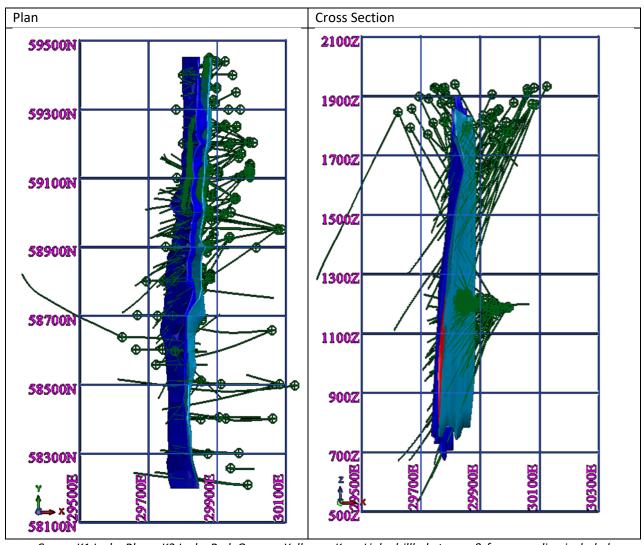
The Kora Consolidated deposits consist of a relatively complex, dilational structural zone hosted in Tertiary phyllites. The mineralization zone comprises narrow high grade gold quartz-sulphide veins, veinlets and disseminations. Historically at Kora North the K1E lode was delineated in the footwall of the structural zone and showed 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 had 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 in the Kora North area for its relative higher copper content compared to K1, occurring as chalcopyrite blebs, veins and masses associated with modest amounts of quartz veining. Initial modelling in 2018 by H&SC used the K92ML-supplied K1E, K1W and K2 lode wireframes, which were based on a 1g/t gold cut off and had 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.

Work completed by Simon Tear in 2018 comprised a site visit and a reassessment of the geological interpretation of the mineral lodes, in conjunction with the current mining method, which led to an updated Mineral Resource Estimate (Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 07 January 2019).

The resulting geological interpretation featured 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 0.1 to 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. For 2020, the wireframes were expanded to incorporate the recent and historic surface drilling, which involved including the previously defined Kora and Eutompi mineral zones. The outcomes of merging these two areas into the K1 and K2 Kora North wireframes appeared reasonable and were partly confirmed by the very recent surface drilling of Eutompi, which resulted in minimal changes to the wireframes. Infill and extensional drilling of Kora North also confirmed the earlier 2018 interpretation and the initial 2020 wireframe expansions were consistent with subsequent drilling of approximately 10-15 holes in February/March 2020 (included in the resource estimates). In addition, the Kora Link zone was further assessed and it was interpreted that rather than being one zone there were a series of narrow, partially overlapping mineral lodes covering a much larger area than the original 2018 interpretation that was used for the resource estimates. These veins appeared at times parallel to the bounding K1 and K2 structures, and other times they appeared slightly oblique, transecting from K2 footwall to K1 hangingwall.

The parallel K1 and K2 lodes for Kora Consolidated deposits generally strike north-south with a very steep dip to the west (Figure 42, Figure 43 and Figure 44). However, there are subtle undulations for both dip and strike in both lodes, which may be due to the ductile nature of the structural zone (wrench fault tectonics) or possibly very minor cross-cutting and offsetting faults. The geological interpretation extends 75m along strike and down dip beyond the last mineral intercept, sufficient for grade interpolation and the provision of target areas for further exploration and possible resource extension. The sub-parallel Kora Link zone is a relatively small area compared to the K1 and K2 lodes by being narrower and having a much shorter strike and dip length; the zone dips steeply to the west.



Cyan = K1 Lode; Blue = K2 Lode; Red, Orange, Yellow = Kora Link; drillhole traces & face sampling included

Figure 42. Plan and Cross Section of the Kora & Kora North Mineral Lodes (H&SC)

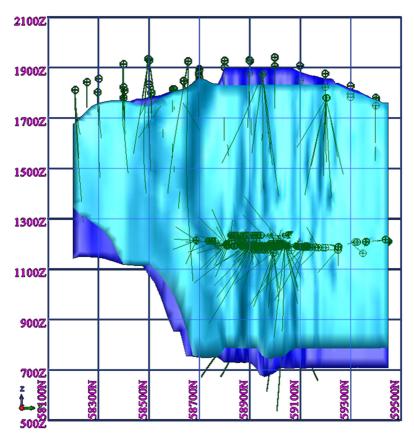


Figure 43. Long Section of the Kora Consolidated K1 and K2 Mineral Lodes – looking west (H&SC)

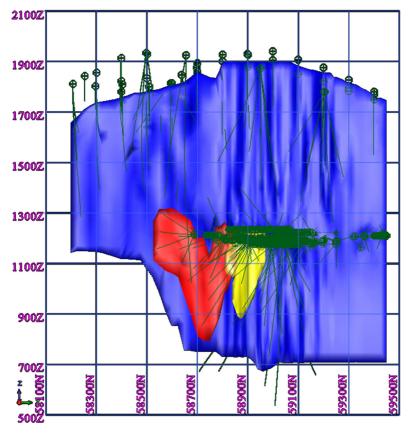


Figure 44. Long Section of the K2 and Kora Link Mineral Lodes – looking west (H&SC)

The advantage of this wireframing technique for K1 and K2 is to first avoid over-constraining of the gold mineralization assay data, as the contacts are not always sharp, and hence avoid potential overstatement of the gold grade in any subsequent grade interpolation. Second the 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 southern end and 20m spaced sections at the northern end. There is no obvious evidence at the south end that K1 and K2 combine. Comparison with the previously reported Irumafimpa mineral wireframes strongly suggests that the original mining at Irumafimpa was not on either of the K1 or K2 lodes. Both lodes tended to narrow slightly both up and down dip of the current underground mining area although occasionally there were localised 'blow out' areas in both grade and width for both lodes.

The Kora Link mineralization has been revised from the 2018 interpretation due to additional infill drilling intended for K1 and K2. The mineral shapes are now similar to the original interpretation supplied by K92ML. However, the number of mineral zones associated with the Kora Link is now 5 (KL1 to KL5) although KL4 and KL5 are considered to be very small with limited data and were not used for the resource estimation. The option of treating the Kora Link as one zone was considered but rejected because there were both very high grade samples and clusters of high grade samples that would lead to smearing of high grade into areas of low grade. To counteract the possibility of over-constraining the composite data for the individual lodes H&SC created 'expanded' wireframes for KL2 and KL3. This comprised expanding the width of the lode wireframe such that its boundary abutted the original interpretation of the adjacent lode.

Dimensions of the mineral zones are listed in Table 24. Dimensions for the 2018 Kora North mineral zones are also included for comparison. The average width of K1 and K2 in the general mining area of Kora North is greater at around 4.5 to 5m; the lodes generally narrow up dip and occasionally down dip.

Lode Volume (m³) Strike (m) Dip (m) Ave Width (m) Κ1 1250 1050 4,366,474 3.3 Κ2 1150 3.5 5,077,382 1250 Kora Link KL1 135 220 2.1 61,485 KL2 170 2.8 75,981 160 3 KL3 335 300 305,548 2018 Interpretation Lode Strike (m) Dip (m) Ave Width (m) Volume (m<sup>3</sup>) Κ1 395 170-260 4.5 368,398 Κ2 370 520 4.3 832,045

**Table 24. Dimensions of the Mineral Lodes** 

Figure 45 is a cross section example of the geological interpretation for Kora North using both drilling and face sample data. The image shows the K1 lode (red dash), the K2 lode (green dash) and two of the Kora Link lodes, KL1 (purple dash) and KL2 (light brown dash). It also shows the logged vein on one side of the drillhole trace along with the gold grade as a scaled coloured bar on the other side. The development drives and stopes are shown as a brown solid outline. The lengths of the colour bars are intended to be relevant to the gold grade, but gold grades are so high that the maximum length has been limited at 30g/t.

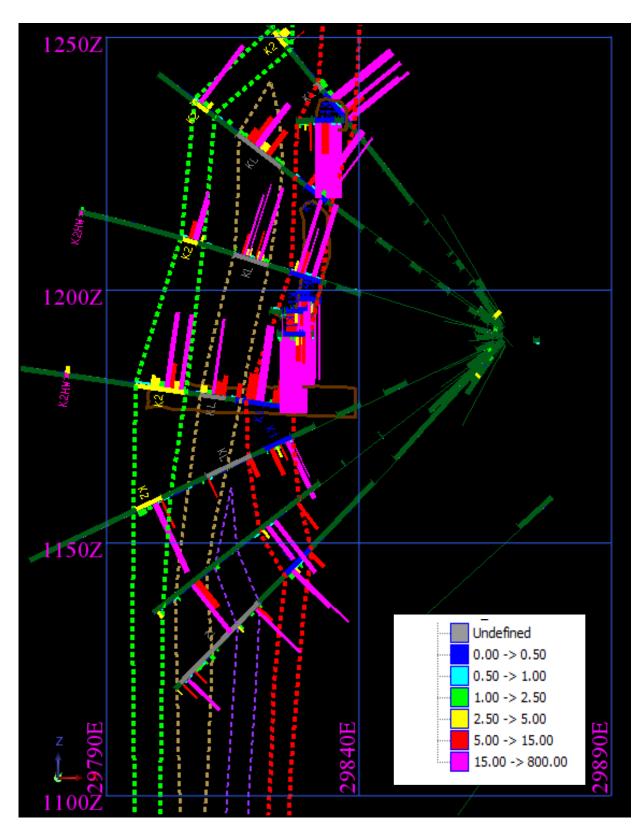


Figure 45. Geological Interpretation for Kora North Cross Section 58900mN (H&SC)

Drillhole spacing is of the order of 10-25m in part of the Kora North area expanding to approximately 100m for the rest of the deposit including Kora and Eutompi.

# 14.3 DATA ANALYSIS

Sampling was under geological control with a minimum sampling width of 0.1m and a nominal maximum of 2m. 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 46 shows the range of sample intervals for the K1 lode wireframe with the dominant sample interval being 1m. The number of samples for the lode has increased almost threefold compared to the 2018 model, this is due to the infill and extensional drilling plus the incorporation of the Kora and Eutompi mineralization.

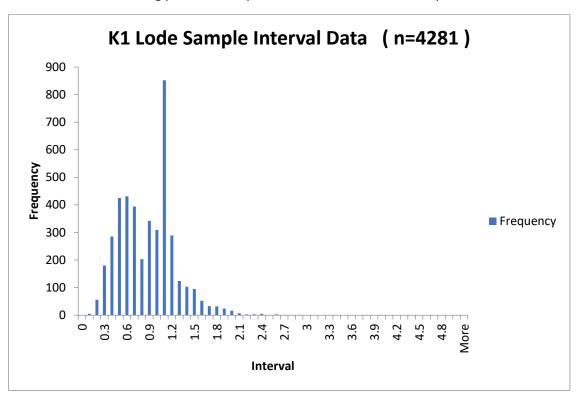


Figure 46. Sample Interval Histogram for the K1 Lode (H&SC)

Figure 47 shows the range of sample intervals for the K2 lode. It is very similar to the data for the K1 Lode. Again the number of samples has increased almost threefold compared with the 2018 model and for the same reasons as for K1.

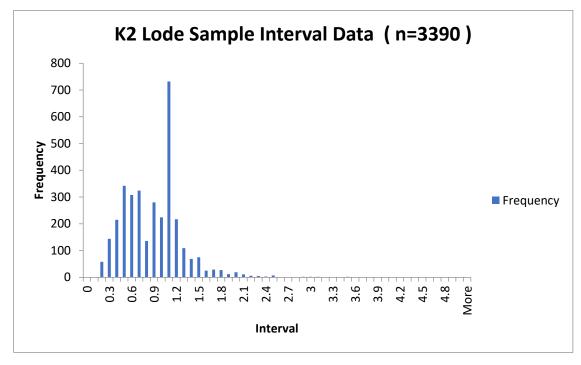


Figure 47. Sample Interval Histogram for the K2 Lode

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 0.5m; smaller residuals were discarded. Each composite sample was assigned to the K1, K2 or Kora Link lodes. A total of 6,837 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 48 shows the composite data for the K1 lode in long section (*zoom in on the figure to get better resolution*). This figure demonstrates the relatively close-spaced nature of some of the sampling, which is subsequently reflected in the chosen block size and resource classification. The dominant N-S flat-lying grade continuity direction lies within the current stope development area. The other thing of note is the Kora deposit's high grade gold zone associated with the wider spaced drilling in the top left area of the section. There is a suggestion of a moderately north-plunging higher grade oreshoot from top left to bottom right.

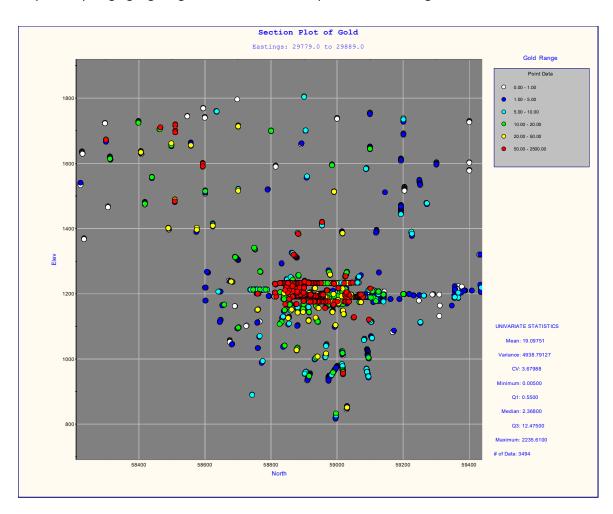


Figure 48. Gold Composite Distribution for the K1 Lode Long Section View (H&SC)

Figure 49 shows the same K1 long section view for copper, with a significantly higher grade copper zone associated with the Kora deposit (black circle). The Kora North area is conspicuous by a significant amount of lower grade intercepts relative to Kora.

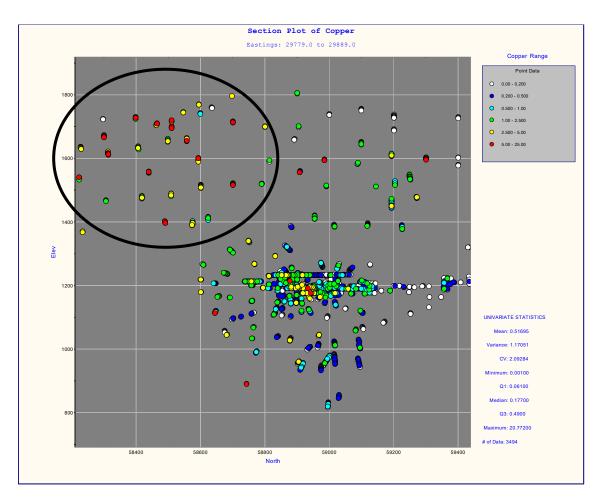


Figure 49. Copper Composite Distribution for the K1 Lode Long Section View (H&SC)

Figure 50 shows the gold grade distribution in long section 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 to be more random.

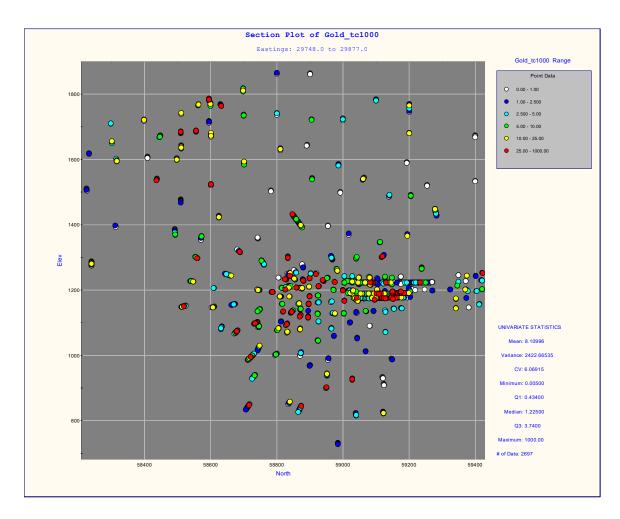
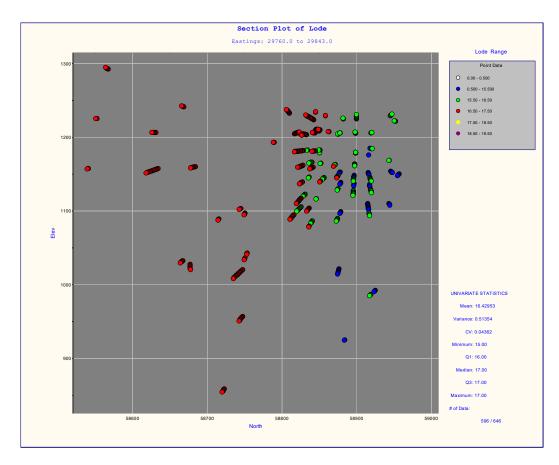


Figure 50. Gold Composite Distribution for the K2 Lode Long Section View (H&SC)

The K2 copper composite grade distribution shows a similar pattern to the K1 copper e.g. the Kora enrichment zone, although there is a marked increase in copper grades associated with Kora North and in particular at its the southern end.

Figure 51 shows, in the upper figure, a long section view of the lode composites for the Kora Link lodes. The blue dots represent KL1, the green dots are KL2 and the red dots are KL3, with the overlapping of the lodes being clearly visible. The lower figure represents the distribution of gold grades for the lodes. The northern area has been well drilled but gold grades appear to be relatively unstructured.



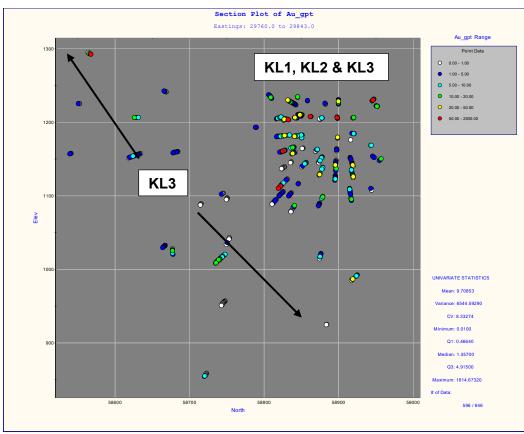


Figure 51. Gold Composite Distribution for the Kora Link Lodes Long Section View (H&SC)

Missing data for the K1 composites i.e. zeros and blanks, were noted for copper and silver with very low grade default values being inserted (Table 25). The missing data is generally due to a lack of assaying for the copper and silver on samples that were originally perceived to be low grade and peripheral to the mineral lode interpretation made at the time of the drilling.

Table 25. Details of Default Grades for the K1 Lode

		Sample Numbers		
Low Grade D	efaults	Zeros	Blanks	
Copper	0.01%	17	149	
Silver	0.01ppm	6	29	

Previous work completed by H&SC for the 2018 resource estimates mentioned that the distinct "difference between the gold means for the diamond core and face sampling types 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 [earlier] drilling 'missed' this high grade zone". This statement is still valid. A key feature of the 2018 model was that reasonable reconciliation was achieved with production using all the data with no top cuts, primarily from the K1 lode, and this appears to have been sustained after a further 18 months of mining (again mainly of the K1 lode). Experimentation by applying top cuts to the data generally indicated that the top cuts had little impact, except on certain noted occasions with extreme values.

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.

Table 26 shows the summary statistics for the K1 lode. The data shows relatively low coefficients of variation (CV = standard deviation/mean) 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 the data represents a single population. These relatively low coefficients of variation ("CVs") further suggest that no top cuts are required. This decision is also helped by the fact that the data around the current mining area is well structured.

Table 26. Summary Statistics for the K1 Lode

All data	Gold	Copper	Silver
Mean	19.10	0.52	7.86
Median	2.37	0.18	3.00
Standard Deviation	70.29	1.08	20.80
Coeff of Variation	3.68	2.09	2.65
Minimum	0.005	0.0005	0.01
Maximum	2235.61	20.7718	643.845
Count	3494	3494	3494

A histogram plot of the gold data indicates a lognormal distribution with a slight positive skew but overall the histogram resembles the expectation for a single population (Figure 52).

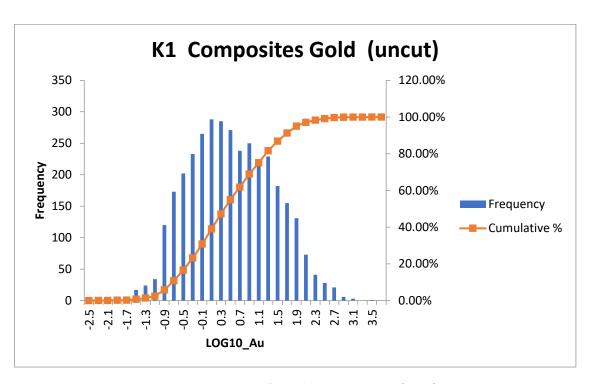


Figure 52. Histogram of K1 Gold Composite Data (H&SC)

For K1 there is no correlation between gold and either copper or silver. However, there is a weak correlation between copper and silver (Table 27).

Table 27. Correlation Coefficients for the K1 Lode Composite Data

	Gold	Copper	Silver
Gold	1		
Copper	0.08	1	
Silver	0.12	0.67	1

Missing data for the K2 composites, i.e. zeros and blanks were noted for copper and silver with very low grade default values being inserted (Table 28). A top cut of 1000g/t was applied to extreme values in the gold data. The missing copper and silver assays are due to the same reasons as for K1.

Table 28. Details of Defaults and Top Cut for the K2 Lode

		Sample Numbers		
Low Grade Defaults		Zeros	Blanks	
Copper	0.01%	8	99	
Silver	0.01ppm	1	29	
Top Cuts		Cut	Samples Affected	
Gold		1000g/t	4	

Table 29 shows the summary statistics for the K2 lode. Previous work completed by H&SC for the 2018 model mentioned that there was relatively little difference between the gold, silver and copper means for both datatypes (diamond core and face sampling), which suggest that the datatypes can be combined. This statement is still valid.

The impact of applying the 1000g/t top-cut for gold is significant as it affected only four samples, but produced a 22% drop in the overall mean value of the composites. The top-cut affected two extreme high grade samples from the drillhole sampling data, where despite H&SC's reluctance to top cut, it was necessary to do so for the grade interpolation. The combined data also shows relatively low CVs for copper and silver.

Table 29. Summary Statistics for the K2 Lode

All data	Gold	Copper	Silver
Mean	8.110	0.930	22.542
Median	1.230	0.342	7.620
Std Dev	49.23	1.64	63.53
Coeff of Var	6.07	1.76	2.82
Minimum	0.005	0.0003	0.02
Maximum	1000	17.458	1283.1
Count	2697	2697	2697

A histogram plot of the gold data indicates a reasonable lognormal distribution with a slight positive skew but overall the histogram resembles the expectation for a single population (Figure 53).

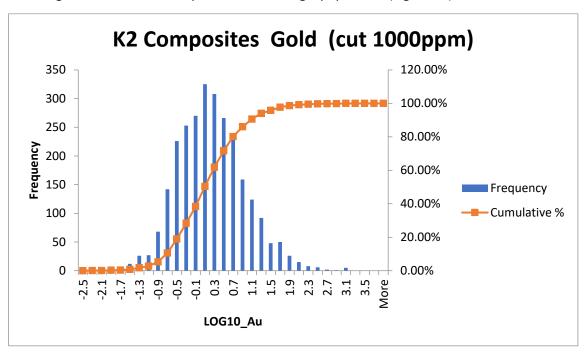


Figure 53. Histogram of K2 Gold Composite Data (H&SC)

There is no significant correlation between the three elements as shown in Table 30.

Table 30. Correlation Coefficients for the K2 Lode Composite Data

	Gold	Copper	Silver
Gold	1		
Copper	0.02	1	
Silver	0.32	0.42	1

Table 31 shows the summary statistics for the Kora Link lode KL1 with low CVs for the three elements suggesting no top cuts need to be applied.

Table 31. Summary Statistics for the Kora Link Lode KL1

KL1	Gold	Copper	Silver
Mean	2.53	0.60	10.36
Median	1.34	0.20	3.00
Standard Deviation	3.11	0.97	17.32
Coeff of Variation	1.23	1.62	1.67
Minimum	0.102	0.01	1
Maximum	15.4076	4.1032	92
Count	80	80	80

For KL2 a single sample with a gold grade of 3,585g/t split across two composites had a major impact on the composite mean. As the area covered by the lode was small, it was anticipated that these data would have a significant over-stating impact on the block grades. To counteract this impact H&SC instigated a method of wireframing an 'expanded' lode shape containing hangingwall and footwall low grade material, generating an increased number of composites with a lower mean value (Table 32). Even so it was still necessary to apply an arbitrary top cut of 150g/t to the highly anomalous sample.

Table 32. Summary Statistics for the Kora Link Lode KL2

KL2 Expanded	Gold	Copper	Silver
Mean	2.14	0.27	5.59
Median	0.22	0.12	2
Standard Deviation	10.08	0.54	17.52
Coeff of Variation	4.72	1.95	3.13
Minimum	0	0	0.45
Maximum	150.83	5.7368	252.85
Count	647	647	647

The data grades and distribution for KL3 suggested that there might be a similar grade interpolation issue for KL3 as for KL2 so it was decided to instigate the same 'expanded' wireframe method for the KL3 composite selection. Summary statistics are supplied in Table 33. The relatively low value of the CVs in conjunction with the composite data selection and subsequent grade interpolation method indicated that the application of top cuts was probably not necessary for the KL3 expanded wireframe composite data.

Table 33. Summary Statistics for the Kora Link Lode KL3

Expanded KL3	Gold	Copper	Silver
Mean	1.72	0.30	5.06
Median	0.17	0.08	1.53
Standard Deviation	6.30	0.78	14.75
Coeff of Variation	3.67	2.63	2.92
Minimum	0.005	0.0003	0.01
Maximum	106.814	13.082	322.9
Count	1127	1127	1127

The above data reaffirms that it is appropriate to combine the face sampling and drillhole composites for the block grade interpolation.

#### 14.4 VARIOGRAPHY

Variography was completed on the composite data to ascertain spatial continuity of grades. The general comment is that the variography was weak. However, it should be noted that outside the drive development and stoping areas the drillhole spacing is very large and, in combination with the narrow lode structure and undulations in their dip and strike, good variography is difficult to achieve and is subject to compromises. The main implication from the variography is that more infill drilling is required.

As the size of K1 had been expanded considerably to take in the Kora mineralization, domaining of the mineral structure was completed based on drilling density and deposit characteristics. Figure 54 shows the K1 composites separated into three domains that were used for variography. The blue coloured dots represent domain 1 which is the detailed drilling and face sampling associated with Kora North, the green dots represent domain 2 (Kora) and the red dots represent domain 3 (Eutompi).

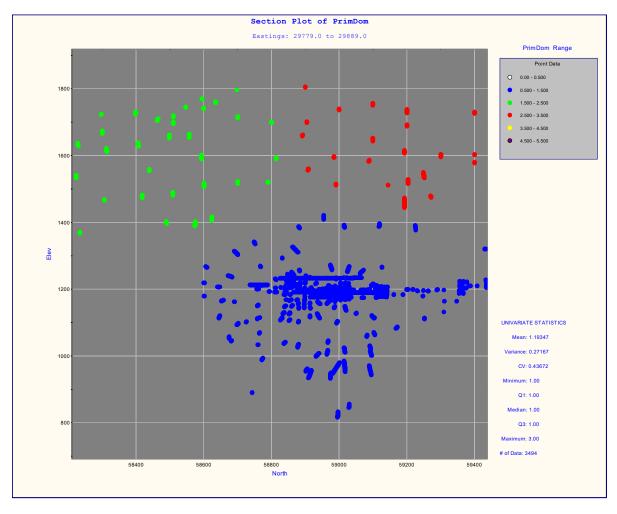
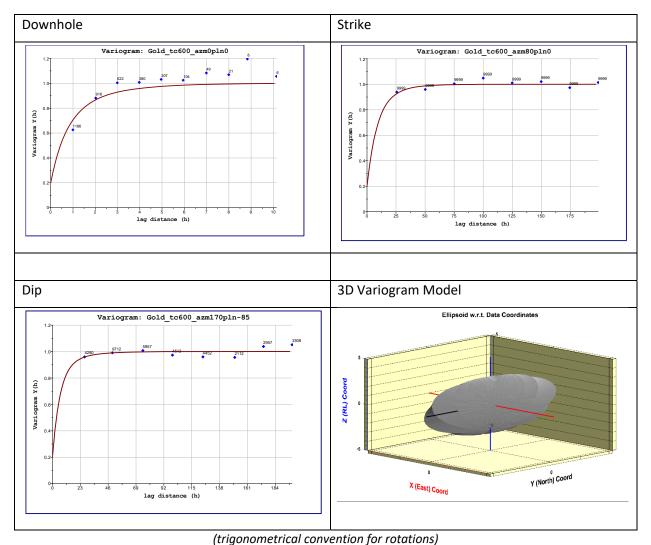


Figure 54. K1 Composite Domains (H&SC)

Figure 55 shows the orthogonal variograms and the resulting 3D variogram model for the domain 1 gold composites of the K1 lode. In an attempt to improve the variography an arbitrary top cut of 600g/t was used.



The variography was poor for domain 2 due to the wide spaced drilling and even worse for domain 3. The variogram model ranges used for domain 2 were used for domain 3 with the appropriate axis rotations.

Figure 55. Variograms & Variogram Model for the K1 Lode Domain 1 Gold (H&SC)

As the size of K2 lode had been expanded considerably to take in the Kora mineralization, domaining of the mineral structure for composite spatial analysis was similar to K1. The gold variogram model for domain 1 of the K2 lode showed a lower level of anisotropy in the axes relative to K1 but is considered a reasonable reflection of the gold grade distribution. Otherwise variograms and variogram models for K2 were reasonably similar to those for K1.

Figure 56 shows a selection of gold variogram models for the K2 lode (domain 1) and the Kora Link lodes (no composite domaining was applied). The expanded data was used for KL2 and KL3 as they involved more data and seemed to give a better set of results. The variography was still weak due to the limited number of data, narrowness of the lodes and subtle variations in dip and strike of the lodes.

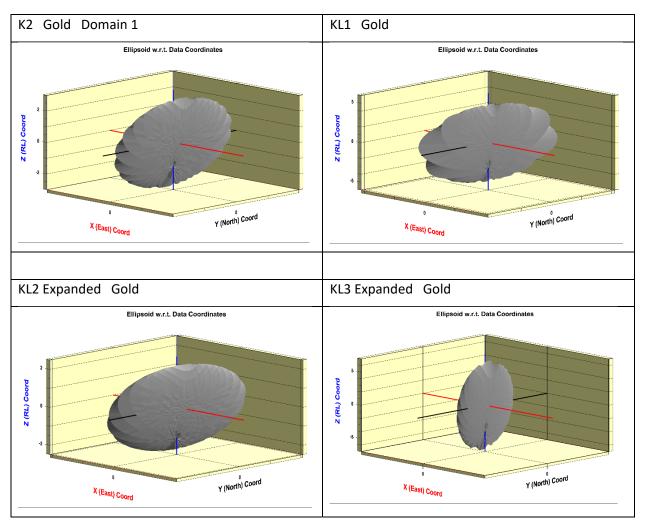


Figure 56. Selected Gold Variogram Models

# 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 and K2 lodes and the face sampling. Details of the Surpac block model are included in Table 34.

**Table 34. Block Models Details** 

Block Model Summary	Kora OK Block Model				
Block model: kora_ok_working_30520.mdl					
Туре	Х	Y	Z		
Minimum Coordinates	29720.5	58102.5	602.5		
Maximum Coordinates	29900.5	59507.5	2002.5		
User Block Size	1	5	5		
Min. Block Size	1	5	5		
Rotation	0	0	0		
Discretisation	2	4	4		

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 three 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 35.

**Table 35. 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	8	125	125	6	2	32

There are subtle variations in the dip and strike of both the K1 and K2 lodes that necessitated the use of search sub-domains with the block grade interpolation. These sub-domains are a product of the changes in the axes' orientations of the search ellipses. Eight search sub-domains, labelled 11 to 18, were used for the three domains of the K1 grade interpolation. Eight subtly different search sub-domains were also used for the K2 lode, labelled 21 to 28, again reflecting the undulations in dip and strike of the lode. All sub-domains had soft boundaries with respect to the grade interpolation. Kora Link lode KL1 was completed using one search domain and the expanded models of KL2 and KL3 both required two search domains.

Density data and analysis was supplied by K92ML. A total of 145 and 82 values were collected for K1 and K2 lodes respectively covering the Kora North area only. 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. Table 36 contains the default density values used for the resource estimates.

**Table 36. Summary of Supplied Density Values** 

Lode	Default Values t/m³
K1	2.84
K2	2.93
KL1	2.84
KL2	2.84
KL3	2.84
Waste	2.8

#### 14.6 ESTIMATION RESULTS

The new global estimates with mining depletion removed (up to end of March 2020) are reported for a range of different gold cut-off grades as shown in Table 37. Estimation results are reported for all block centroids inside the relevant mineral wireframe (in/out basis). The same data is presented as a series of graphs in Figure 57. Classification of the estimates is included later in this chapter.

K92ML supplied H&SC with price and recovery assumptions in order to produce a gold equivalent value to include the copper and silver grades. Metal equivalents are reported here to give a better indication of potential project value.

The Gold Equivalent (Au\_Eq) g/t was calculated using the formula:

# Au g/t +(1.494\*(0.923\*Cu%)) + (0.0115\*(0.77\*Ag g/t))

Assumptions include:

- Gold prices of US\$1,400/oz: Silver US\$16.05/oz; Copper US\$3.05/lb
- Recoveries relative to gold of 92.3% for copper and 77% for silver

**Table 37. Estimation Results** 

Au Cut off g/t	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Mozs	Cu Kt	Ag Mozs	Au_Eq Mozs
0	21.0	5.97	0.91	16.4	7.38	4.03	191	11.1	5.0
0.5	18.7	6.67	0.95	17.6	8.14	4.00	177	10.6	4.9
1	15.8	7.75	1.00	19.0	9.30	3.94	158	9.6	4.7
1.5	13.4	8.90	1.06	20.4	10.55	3.84	142	8.8	4.5
2	11.3	10.25	1.12	21.7	11.98	3.72	126	7.9	4.4
2.5	9.7	11.55	1.16	22.7	13.35	3.61	113	7.1	4.2
3	8.4	12.95	1.18	23.6	14.79	3.49	99	6.4	4.0
4	6.6	15.49	1.21	24.8	17.38	3.29	80	5.3	3.7
5	5.4	18.03	1.23	25.9	19.95	3.12	66	4.5	3.4
10	2.5	31.10	1.10	31.3	32.89	2.46	27	2.5	2.6

(minor rounding)

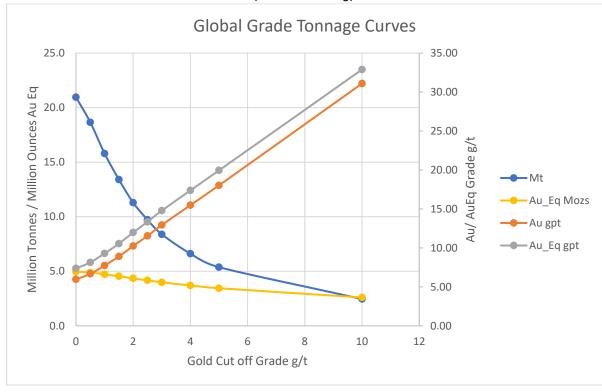


Figure 57. Grade Tonnage Curves for the Kora & Kora North Deposits (H&SC)

## Observations of the results include:

- The impact of top cutting the gold composite data for the K1 lode is modest i.e. <5% difference in gold ounces. Experimental top cutting for silver has a minimal effect.
- The effect of the gold 1000g/t top cut for the K2 lode is significant with just under 700,000 of gold ounces being associated with the four samples >1000g/t. It should be noted that these samples are outside the face sampling zone, in areas of wide spaced drilling, where the impact of such grades can have a major influence. The experimental effect of top-cutting the silver is minimal.
- A similar effect to K2 is noted with the extreme gold composite value for the Kora Link lode KL2 where some 44,000 ounces are associated with the one sample (note the deposit size is only some 24,000 ounces).

Figure 58 shows the gold block grade distribution for the K1 lode for all search passes with no cut off grade. There seems to be a central enriched zone plunging moderately to the north.

Gaps in the block model are due to a lack of data being available for the grade interpolation, particularly with the six minimum data condition for a lode less than 5m wide. Hence some of this lack of data might be due to a narrowing of the lode and/or a relatively dramatic local change in dip and/or strike. It emphasises the need for further infill drilling.

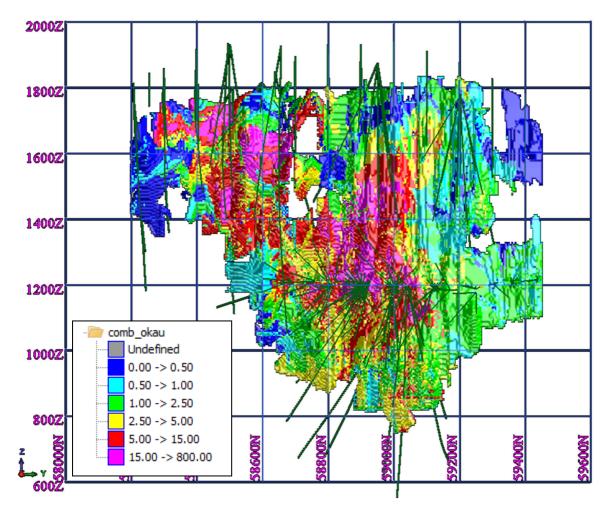


Figure 58. K1 Lode Gold Block Grade Distribution All Passes Long Section (H&SC)

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

Figure 59 shows the copper block grade distribution for the K1 lode for a zero gold cut off grade. It shows marked zones of enrichment associated with the Kora and Eutompi deposits relative to Kora North.

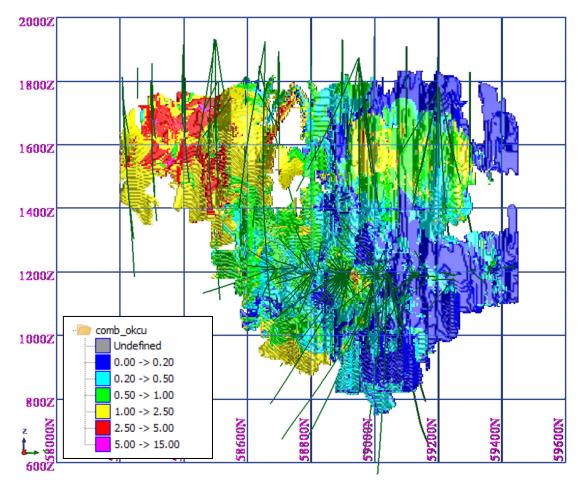


Figure 59. K1 Copper Block Grade Distribution All Passes Long Section (H&SC) (view: looking west)(green lines = drillhole traces and face samples)

Figure 60 shows the gold block grade distribution for the K2 lode for all search passes with no cut off grade. Higher grade zones seem to be scattered about as localised lenses, which may be a real feature and not an artifact of the modelling. These zones do represent a higher risk in which follow up drilling may not match the expected grades.

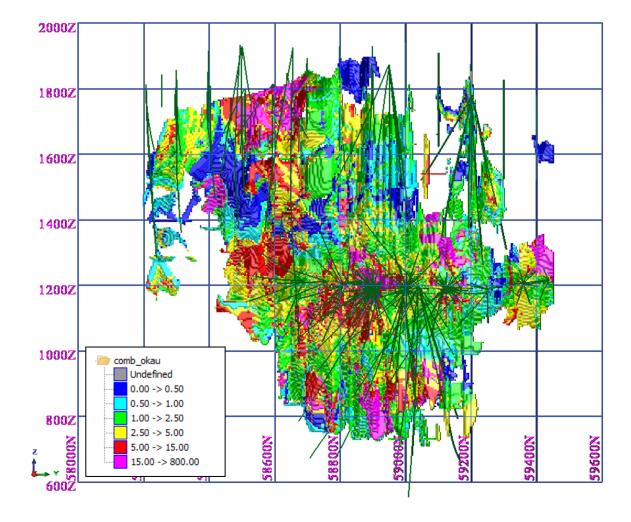


Figure 60. K2 Gold Block Grade Distribution All Passes Long Section (H&SC)

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

Figure 61 shows the copper block grade distribution for the K2 lode for a zero gold cut off grade. It shows an overall elevation in copper values relative to K1 and has a higher grade in parts of the Kora area as per the K1 lode.

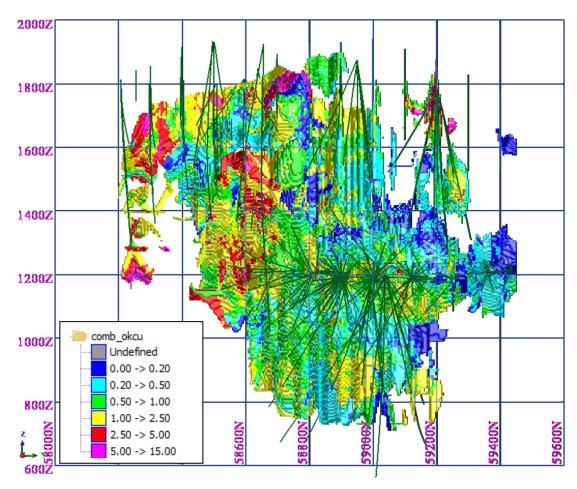
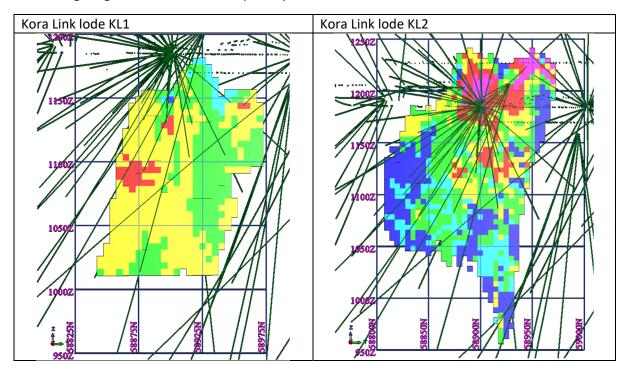


Figure 61. K2 Copper Block Grade Distribution All Passes Long Section (H&SC) (view: looking west)(green lines = drillhole traces and face samples)

Figure 62 shows the gold grade distribution for the Kora Link lodes for all search passes. It confirms the patchy nature to the higher grade mineralization especially for KL2 and KL3.



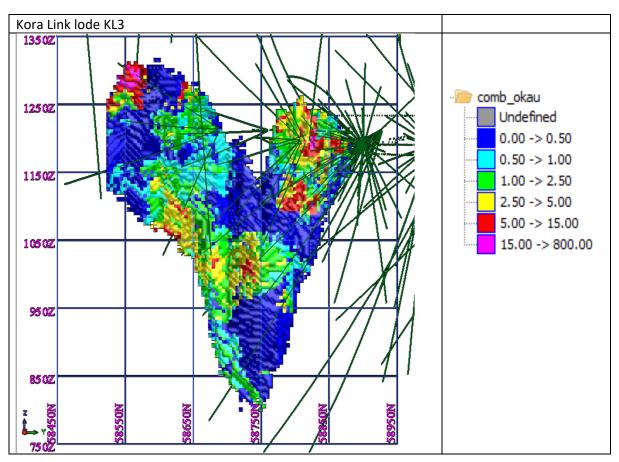


Figure 62. Kora Link Lodes Gold Block Grade Distribution All Passes Long Section (H&SC) (view: looking west)(green lines = drillhole traces and face samples)

## 14.7 BLOCK MODEL VALIDATION

Block model validation has consisted of visual inspection of block grades against drillhole assay grades and composite values, 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.

## 14.7.1 Block Grade-Drill Assays Visual Comparison

Block grades were viewed in section against both drillhole assays and composite values. Minor discrepancies were noted for the more peripheral drillholes. The narrowness of the sample intervals and the block size make visual representations difficult to show clearly.

Figure 63 shows an example of gold block grades versus drillhole assays for the K1 (red dash), K2 (green dash), KL1 (purple dash) and KL2 (light brown dash) lodes. The comparison is reasonable considering the section window is 10m and the surrounding drillhole and face sampling data.

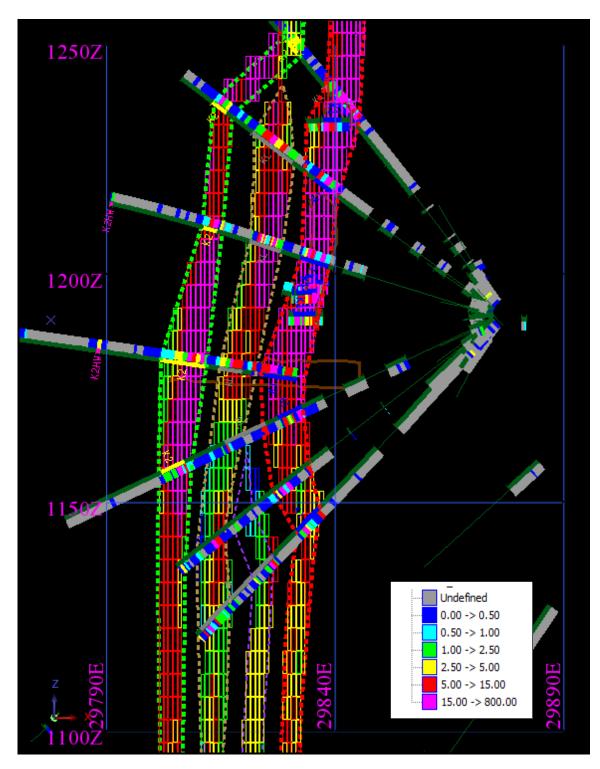


Figure 63. Gold Block Grade & Drillhole Assay Comparison Cross Section 58900mN

However, it should be noted that the above section is the only one that is clear enough to show drillholes intersecting both K1 & K2 with a reasonable amount of grade for new drillholes (relative to the 2018 report). It just so happens to coincide with 2 of the Kora Link lodes showing their thickest intercepts. There is not much extension to the Kora Link lodes in the sections going north and south.

Figure 64 and Figure 65 contains examples of gold block grades against composite values for the K1 lode.

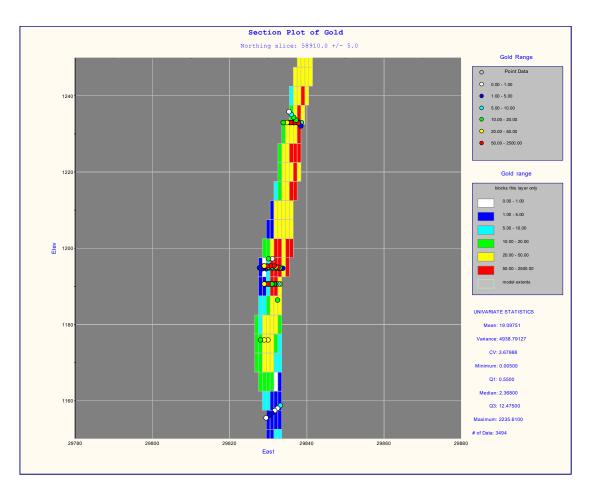


Figure 64. Block Grade and Composite Value Comparison for the K1 Lode Cross Section 58910mN (H&SC)

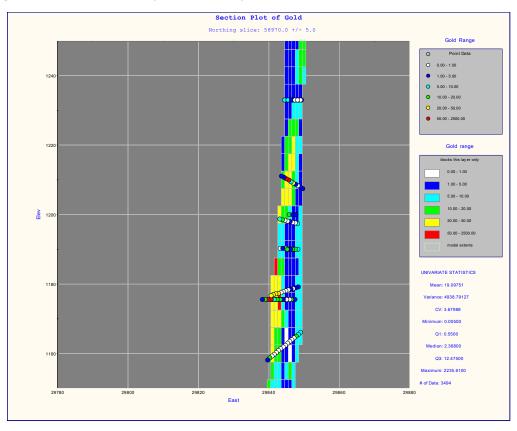


Figure 65. Block Grade and Composite Value Comparison for the K1 Lode Cross Section 58970mN (H&SC)

## 14.7.2 Summary Statistics Comparison

Count

A comparison of composite and block grade means would normally be expected to show the composite mean being higher than the block grade mean. This is clearly the case for gold for the K1 lode as shown in Table 38. It indicates no obvious issues with the grade interpolation and suggests that the uncut high gold grades, particularly from the face sampling, have been managed by the modelling. However, copper and silver show higher block means than the composite averages (yellow highlights in table below), which is attributed to higher copper and silver composite values in areas of widely spaced drilling, where the higher values are likely to have a greater impact on block grades. In addition, a large majority of the composites, mainly from the face sampling, are in an area of low copper grades and thus would tend to have the effect of lowering the average copper composite grade (and silver noting the weak correlation). It should also be noted that the pass 1 and pass 2 mean copper and silver grades are much lower than the means for the remaining pass 3.

	Gold		Copper		Silver	
	Comp	Block	Comp	Block	Comp	Block
Mean	19.10	6.01	0.52	0.82	7.86	10.24
Median	2.37	2.47	0.18	0.48	3.00	6.02
Standard Deviation	70.29	11.84	1.08	0.92	20.80	13.11
Coeff of Variation	3.68	1.97	2.09	1.13	2.65	1.28
Minimum	0.005	0	0.001	0	0.01	0
Maximum	2235.61	755.86	20.772	8.4	643.845	229.36

3494

132559

3494

132559

132559

3494

Table 38. Comparison of Summary Statistics for Composites & Block Grades for the K1 Lode

Table 39 shows the summary statistics comparison for the K2 lode composites and block grades. 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 on the block mean. It should also be noted that the pass 1 and pass 2 mean copper grades are lower than the means for the remaining pass 3, which implies that the face sampling, which accounts for a substantial portion of the composite data, is in an area of relatively lower copper grade. The difference in the means for silver is much smaller but likely due to the same reasons as for copper.

Table 39. Comparison of Summary	y Statistics for Composite	s & Block Grades	for the K2 Lode
---------------------------------	----------------------------	------------------	-----------------

	Gold		Copper		Silver	
	Comp	Block	Comp	Block	Comp	Block
Mean	8.11	6.66	0.93	1.05	22.54	22.95
Median	1.23	2.21	0.34	0.73	7.62	14.79
Standard Deviation	49.23	18.91	1.64	1.03	63.53	26.70
Coeff of Variation	6.07	2.84	1.76	0.98	2.82	1.16
Minimum	0.005	0	0	0	0.02	0
Maximum	1000	505.15	17.458	12.7	1283.1	529.08
Count	2697	143323	2697	143323	2697	143323

Table 40 shows the summary statistics comparison for the Kora Link lodes. The KL1 lode has the block gold mean slightly higher than the composite gold average, which potentially suggests a slight over-statement of block grades. However, the overall impact on the resource estimates is likely to be very minimal on account of the low grade and small volume of the lode, such that the mean difference is not considered significant at this stage.

For KL2 and KL3 the composite averages for the actual mineral wireframe are juxtaposed with the block grades from the expanded model and are higher than the block means. This shows the effectiveness of the expanded model technique especially if the block grade data is compared to the summary statistics for block grades directly modelled from the original composites. It is possible that the expanded model is slightly conservative, but it is more prudent to use it at this stage, particularly for KL2.

Table 40. Comparison of Summary Statistics for Composites & Block Grades for the Kora Link Lodes

Kora Link lode KL1	Gold		Copper		Silver	
	Comp	Block	Comp	Block	Comp	Block
Mean	2.53	2.72	0.60	0.59	10.36	10.33
Median	1.34	2.58	0.20	0.49	3.00	7.55
Standard Deviation	3.11	1.10	0.97	0.39	17.32	9.47
Coeff of Variation	1.23	0.40	1.62	0.66	1.67	0.92
Minimum	0.102	0.33	0.01	0.03	1	1
Maximum	15.4076	7.43	4.1032	2.4	92	59.94
Count	80	2048	80	2048	80	2048

Kora Link lode KL2	Gold		Copper		Silver	
	Comp	Block	Comp	Block	Comp	Block
Mean	7.92	3.56	0.51	0.34	11.95	7.12
Median	1.28	2.03	0.25	0.26	4.00	5.01
Standard Deviation	25.23	5.14	0.86	0.25	28.84	6.75
Coeff of Variation	3.18	1.45	1.70	0.75	2.41	0.95
Minimum	0.0496	0.05	0.01	0.02	1	1
Maximum	200	59.11	7.736	2.15	266	76
Count	180	3065	180	3065	180	3065

Kora Link lode KL3	Gold		Copper		Silver	
	Comp	Block	Comp	Block	Comp	Block
Mean	4.83	2.02	0.59	0.39	10.91	6.94
Median	1.13	1.05	0.27	0.25	3.77	4.17
Standard Deviation	11.19	2.79	1.21	0.43	29.09	7.62
Coeff of Variation	2.32	1.38	2.06	1.11	2.67	1.10
Minimum	0.01	0.01	0.0033	0.01	1	0.81
Maximum	106.76	27.56	13.55	4.51	460	141.43
Count	372	12035	372	12035	372	12035

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

# 14.7.3 Cumulative Frequency Curves Comparison

Another grade interpolation check is to compare cumulative frequency curves for the composites and block grades for the different elements for the different lodes. Figure 66 shows the cumulative frequency comparison for uncut gold in the K1 lode and exhibits a very acceptable pattern. This was completed for all elements for the other lodes and indicated no significant issues with the grade interpolation or post modelling processing.

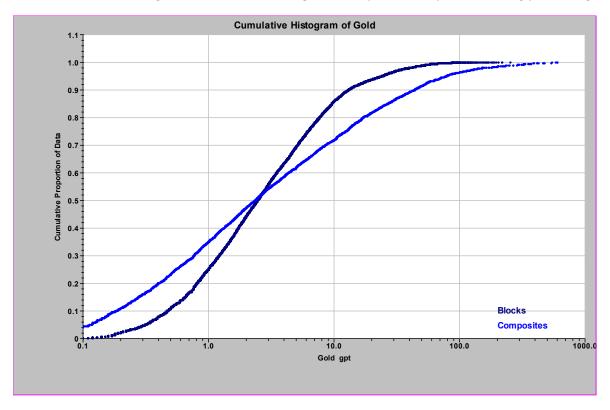


Figure 66. Gold Block Grade & Composite Cumulative Frequency Curves for the K1 Lode (H&SC)

Figure 67 shows the cumulative frequency curves for the composite and block grade data for KL2. It is used to justify the use of the expanded wireframe technique. It shows the original (blue) and expanded model (red) composites along with their respective interpolated block grade data.

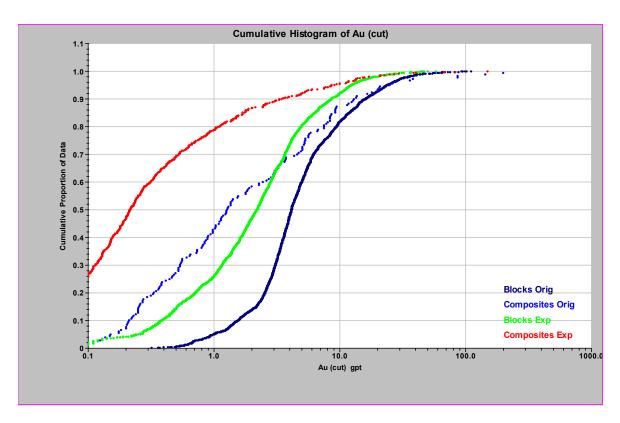


Figure 67. Gold Block Grade & Composite Cumulative Frequency Curves for the KL2 Lode (H&SC)

It can be seen that interpolated expanded model block grades (in green) link well with the original composites (in blue) in a pattern that is very acceptable. The interpolated block grades form the original composites (dark blue) show a significant shift to the right and is indicative of a substantial over-statement of gold block grade.

#### 14.7.4 Check Models

The 2018 work comprised a number of check models with the following conclusions:

- The use of an expanded wireframe to represent the mining widths appeared to be appropriate especially in respect to the reconciliation.
- 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.

For 2020 check Multiple Indicator Kriged ("MIK") models for the K1 and K2 lodes were undertaken by H&SC's Sydney office using a dynamic search interpolation method. The results for each lode from this model were reported for the OK model pass categories. The MIK K1 outcomes showed a very good match with the OK model estimates (<0.3% difference between gold equivalent ounces), whilst the K2 results were acceptable; the MIK estimates had just under 6% more gold equivalent ounces although the increase was associated with the more peripheral search pass and therefore of higher risk. A comparison of the results for the mined material show very similar overall gold ounces, although the OK model had slightly more gold equivalent ounces from K1 which was offset by more ounces from the MIK model for K2. The check provides added confidence in the resource estimates generated by the OK modelling.

## 14.7.5 Reconciliation

Reconciliation data was supplied by K92ML, comprising total mined tonnes, tonnes processed by the mill and the amount of gold ounces recovered for the end of March 2020, covering approximately two years of mining. The mill processed material has included the K1 and K2 development drives and stopes plus 'other' material derived from reprocessed material and small amounts of material from dilution from CAF mining operations as well as from mining of Irumafimpa, Judd, Link and other mineralized structures.

It should be noted that the gold ounces from the block model are reported with no top cut at a zero gold cut off.

Reporting of the estimates from the H&SC model using the intersection of the interpreted mineral lode and the surveyed stope and development shapes indicated that 172,674 tonnes of lode material had been extracted which implied that 53,315 tonnes of dilution had also been mined from Kora North. When the extracted lode material is added to the 'other' material, the combined tonnage is 225,075 tonnes containing 139,511 ounces, some 42,250 tonnes and 19,000 ounces less than the mill production figures (which include the mined dilution but not any stockpiled material).

It appears that the H&SC model is under-reporting the amount of gold ounces in comparison with production ounces by approximately 12%. These figures might be improved if the 53,315 tonnes of dilution extracted with the stope and development mining contains gold grades, which based on the small volumes being considered and the understanding of the geology of the lodes is reasonable, although at what grade is uncertain.

The reconciliation for the end of March 2020 is detailed in Table 41.

Table 41. End of March 2020 Reconciliation

To end of March 2020						
	Mill	Production F	igures			
	Tonnes	Au (g/t)	Ounces			
Total	267,347	18.46	158,644			
	Recovered	d ounces	147,245			
	Н&9	SC Resource	Model			
Lode	Tonnes	Au (g/t)	Ounces			
K1	116,948	29.62	111,383			
K2	55,726	7.67	13,743			
Total	172,674	22.54	125,126			
Other mate	erial					
Sep 2018	15,543	6.0	2,982			
Mar 2020	36,858	9.64	11,430			
Total	225,075	19.28	139,531			

(the use of significant figures does not imply accuracy)

The results of the reconciliation would appear to justify that the combination of using both drillhole and face sampling data, no widespread use of top cuts, variography, composite length, geological interpretation and search parameters has removed/significantly reduced the smearing of the very high gold grades and any subsequent over-statement of the resource estimates.

The reconciliation outcomes are reasonably similar to the outcomes from September 2018 and allow for a good level of confidence in the new resource estimates and the methodologies used to generate them.

#### 14.8 RESOURCE CLASSIFICATION

Allocation of the classification of the Mineral Resources is derived from the search pass number 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, variography, sample recovery, quality of the QAQC sampling and outcomes, density data, block model validation and reconciliation with production.

Table 42 contains details of the resource classification from the pass categories.

Pass Category	Resource Classification				
1	Measured				
2	Indicated				
3	Inferred				

Table 42. Resource Classification Details

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 K1 and K2 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 over-statement of grade within the resource estimates. This appears to have been successfully completed based on the block model validation and reconciliation with mill production.
- The sampling methods: the bulk of the resource estimates have been generated from diamond drilling results which is generally considered the best sampling technique (assuming good core recoveries). However, a substantial amount of the high grade assays are from face sampling which can be prone to variance associated with the actual sampling method e.g. not passing into background on both hangingwall and footwall and is considered a sub-optimal sampling method with respect to diamond drilling. Counter to these potential negatives is that K92ML have a good documented face sampling procedure that attempts to minimise the risk with the sampling technique and it is worth noting that the development and stoping associated with the face sampling appears to be reconcilable with the block model. Another positive is that the face sampling is covered by reasonably close spaced diamond core drilling, particularly for the K1 lode.
- 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 and subsequent mining provides a high level of confidence in the gold grade continuity in that area.
- 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 to industry standard and the QAQC outcomes impart a high level of confidence in the appropriateness of the sampling methods and the accuracy of the assays. For the 2018-2020 period QAQC has been completed on the face sampling with acceptable results. The pre-Sept 2018 face sampling had no QAQC data but sample preparation and assaying had been completed on concurrent drilling samples, which indicated no significant issues.
- 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
- Reconciliation: this is reasonable with predicted block model ounces generally within 12% of mill
  production up to the end of March 2020. This has allowed for a reasonably high level of confidence in
  the gold content for material in the immediate vicinity of the development drives and mined stopes.

Figure 68 represents the distribution of Measured (red blocks), Indicated (green blocks) and Inferred Resources (blue blocks) for the K1 lode. The gaps in the model are blocks with no interpolated grades due to a lack of data and conceivably represent areas for expanding the resource estimates via additional drilling.

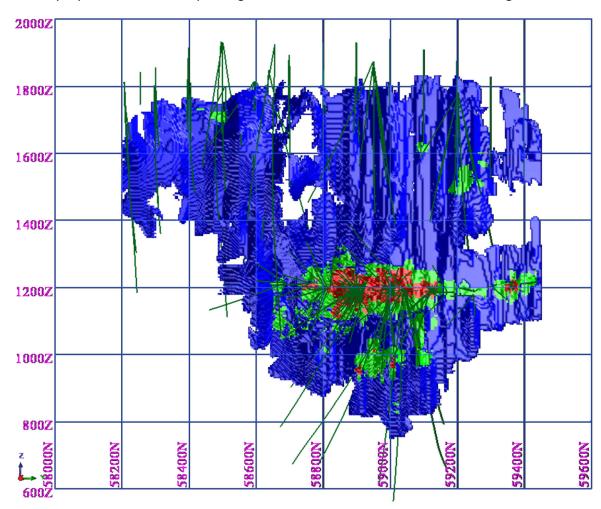


Figure 68. Resource Classification for the K1 Lode (H&SC)

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

A similar pattern occurs for the K2 lode.

## 14.9 DISCUSSION OF FACTORS FOR THE MINERAL RESOURCES

- 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 (well structured data), the method is acceptable for grade interpolation. This is in preference to a more sophisticated and time consuming modelling method like Multiple Indicator Kriging at this stage.
- 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 0.1-0.2g/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 in part on the current mining method which can involve some dilution with generally lower gold grade material and possibly a small amount barren waste rock. In more peripheral areas there is sometimes less certainty in the interpretation due to multiple mineral drill intercepts and the wide drillhole spacing. The spotty nature to the gold mineralization for K2 might be considered indicative of the issue.
- Wide drillhole spacing. Large parts of both mineral lodes have been interpreted from wide spaced drilling generally in the order of 100m. In H&SC's experience modelling of gold composite data with such wide spacings is relatively high risk, hence the Inferred classification, but the situation could lead to substantial changes, most likely reductions, in the resources estimates with any follow up infill drilling. The spotty nature to the gold mineralization for K2 might be considered indicative of such a scenario possibly happening.
- Incorporation of the face sampling data into the grade interpolation. Summary statistics for the K1 lode have shown 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 current mining. Check modelling in 2018 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.
- Limited density data. There is not enough density data for interpolating at this stage and has resulted in the use of default values, 2.84t/m3 for K1 and 2.93t/m3 for K2. However, the similarity in the rather limited range of values for the different lodes suggest the default values used in resource estimation are reasonable. The collection of more data is being continued with the current drilling. Further information regarding density measurement is located in Appendix 1 of this report.
- The relatively small block size. Often a small block size can lead to over-smoothing of grades and thus an over-statement 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 and K2 lodes. In 2018 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.
- Limited top cutting was applied to extreme high grade gold composites. 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. However, very extreme values with a strong demonstrable impact on likely block grades were top cutted i.e. for the K2 and KL2 lodes. The reconciliation outcomes strongly suggest that gold top cuts are not needed for the general mined area.

- Minimum number of data. H&SC has kept the minimum number of data for the Pass 6 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.
- Reconciliation. Considering the geological complexity and localised high grades being within 12% of the mill processed ounces is considered a good result. However, 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 and the geological interpretation of the mineral lode in conjunction with the current mining method. A significant variation in the current numbers used for reconciliation may undermine some of the confidence in the resource estimates, particularly on account of the generally small volumes being considered as a proportion of the overall MRE.

The key to the confidence of the resource estimates is the apparent good reconciliation of the block model with the mill production in an area of very high gold grades. 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.

The Qualified Person is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the potential development of the Mineral Resource Estimate.

## 14.10 MINERAL RESOURCE ESTIMATES

Reporting of the new MRE for the Kora Consolidated deposits are included as Table 43, Table 44 and Table 45 for a 0g/t, 1g/t and 2g/t cut off respectively. The constraints for the K1 lode are uncut gold grade for block centroids inside the K1 mineral wireframe with mined depletion removed. The constraints for the K2 lode are cut gold grade (1000g/t) for block centroids inside the K2 mineral wireframe with mined depletion removed. The same K1 constraints are used for reporting MRE for Kora Link lodes KL1 and KL3, with the same constraints for the KL2 estimates but for cut gold grade data (150g/t).

The Mineral Resources reported in this section have been classified under the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves.

K92ML requested reporting of a gold equivalent (Au\_Eq) g/t to include copper and silver credits using the formula:

Au g/t +( $(0.923 \times Cu\%) \times 1.494$ )) + ( $(0.77 \times Ag g/t) \times 0.0115$ ).

Assumptions provided by K92ML include:

- Gold price of US\$1,400/oz: Silver US\$16.05/oz; Copper US\$3.05/lb
- Recoveries relative to gold of 92.3% for copper and 77% for silver

Table 43. Mineral Resources for the Kora &Kora North Deposits at 0g/t Au Cut-off Grade

K1 Lode									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.40	15.55	0.34	5.8	16.07	202	1.4	75	208
Indicated	1.00	5.35	0.39	6.4	5.95	172	3.9	205	191
Total M & I	1.40	8.28	0.37	6.2	8.85	374	5.3	280	400
Inferred	7.89	5.22	0.90	11.0	6.56	1,324	71.1	2,792	1,664

(minor rounding)

K2 Lode									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.19	10.17	0.83	22.7	11.52	63	1.6	140	71
Indicated	1.31	10.95	0.84	24.3	12.32	462	11.0	1,025	520
Total M & I	1.51	10.85	0.84	24.1	12.22	525	12.6	1,165	592
Inferred	8.94	5.95	1.08	22.8	7.64	1,709	96.9	6,556	2,197

(minor rounding)

Kora Link									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.12	4.79	0.47	10.0	5.53	19	0.6	40	22
Indicated	0.46	2.74	0.40	7.6	3.35	41	1.8	112	50
Total M & I	0.58	3.18	0.41	8.1	3.82	60	2.4	152	72
Inferred	0.63	1.64	0.39	6.7	2.25	33	2.5	137	46

(minor rounding)

Global									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Moz	Cu Kt	Ag Moz	Au_Eq Moz
Measured	0.72	12.3	0.49	11.0	13.03	0.28	3.5	0.3	0.3
Indicated	2.77	7.6	0.60	15.0	8.53	0.68	16.8	1.3	0.8
Total M & I	3.49	8.5	0.58	14.2	9.46	0.96	20.3	1.6	1.1
Inferred	17.5	5.5	0.98	17	7.0	3.1	171	9.5	3.9

(Note gold, silver and gold equivalent ounces reported as million ounces)(minor rounding)

Table 44. Mineral Resources for the Kora &Kora North Deposits at 1g/t Au Cut-off Grade

K1 Lode									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.39	16.09	0.34	5.9	16.60	201	1.3	73	208
Indicated	0.88	5.97	0.39	6.6	6.56	170	3.4	188	186
Total M & I	1.27	9.07	0.37	6.4	9.63	371	4.7	262	394
Inferred	5.68	7.03	0.97	12.4	8.49	1,284	55.3	2,267	1,550

(minor rounding)

K2 Lode									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.17	11.36	0.90	24.6	12.82	63	1.5	135	71
Indicated	1.26	11.36	0.86	24.8	12.76	461	10.8	1,007	518
Total M & I	1.43	11.36	0.86	24.8	12.76	524	12.3	1,142	588
Inferred	6.68	7.77	1.24	26.7	9.71	1,669	82.6	5,743	2,086

(minor rounding)

Kora Link									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.10	5.92	0.52	11.8	6.73	19	0.5	37	21
Indicated	0.32	3.75	0.45	9.3	4.46	39	1.4	96	46
Total M & I	0.42	4.26	0.46	9.9	4.99	57	1.9	134	67
Inferred	0.31	2.95	0.50	10.0	3.73	30	1.6	101	37

(minor rounding)

Global									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Moz	Cu Kt	Ag Moz	Au_Eq Moz
Measured	0.66	13.34	0.51	11.6	14.14	0.28	3.4	0.25	0.3
Indicated	2.47	8.44	0.63	16.3	9.46	0.67	15.6	1.29	0.8
Total M & I	3.13	9.47	0.61	15.3	10.45	0.95	19.0	1.54	1.1
Inferred	12.67	7.32	1.10	19.9	9.01	2.98	139.4	8.11	3.7

(Note gold, silver and gold equivalent ounces reported as million ounces)(minor rounding)

Table 45. Mineral Resources for the Kora &Kora North Deposits at 2g/t Au Cut-off Grade

K1 Lode									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.34	18.06	0.35	6.2	18.60	199	1.2	68	205
Indicated	0.67	7.37	0.42	7.3	8.01	160	2.8	158	173
Total M & I	1.02	10.98	0.39	6.9	11.58	359	4.0	225	378
Inferred	4.13	9.12	1.11	14.2	10.78	1,212	46.0	1,889	1,433

(minor rounding)

K2 Lode									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.13	14.28	1.01	27.9	15.92	61	1.3	119	68
Indicated	1.02	13.64	0.89	26.9	15.11	449	9.2	886	498
Total M & I	1.16	13.71	0.91	27.0	15.20	510	10.5	1,005	565
Inferred	4.48	10.86	1.41	31.8	13.09	1,564	63.2	4,585	1,885

(minor rounding)

Kora Link									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Koz	Cu Kt	Ag Koz	Au_Eq Koz
Measured	0.08	7.00	0.55	13.3	7.88	18	0.4	34	20
Indicated	0.23	4.67	0.46	10.2	5.40	34	1.0	75	40
Total M & I	0.31	5.27	0.48	11.0	6.04	52	1.5	109	60
Inferred	0.20	3.81	0.55	11.7	4.67	24	1.1	75	30

(minor rounding)

Global									
Category	Mt	Au g/t	Cu %	Ag ppm	Au_Eq g/t	Au Moz	Cu Kt	Ag Moz	Au_Eq Moz
Measured	0.55	15.58	0.54	12.4	16.43	0.3	3.0	0.2	0.29
Indicated	1.93	10.39	0.68	18.1	11.48	0.6	13.0	1.1	0.71
Total M & I	2.48	11.55	0.64	16.8	12.58	0.9	16.0	1.3	1.00
Inferred	8.81	9.89	1.25	23.1	11.82	2.8	110.2	6.5	3.3

(Note gold, silver and gold equivalent ounces reported as million ounces)(minor rounding)

Figure 69 shows the gold block grade distribution for the K1 Mineral Resources at a 1g/t cut off (includes depletion).

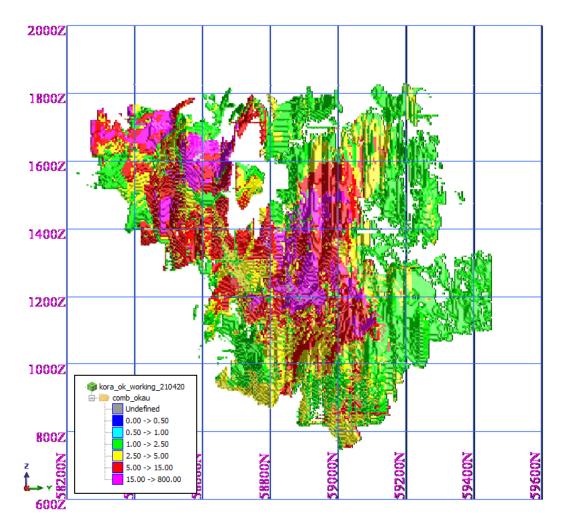


Figure 69. K1 Lode Mineral Resources Gold Long Section 1g/t Cut Off (H&SC)

(view:looking west)

Figure 70 shows the gold block grade distribution for the K2 Mineral Resources at a 1g/t cut off (includes depletion).

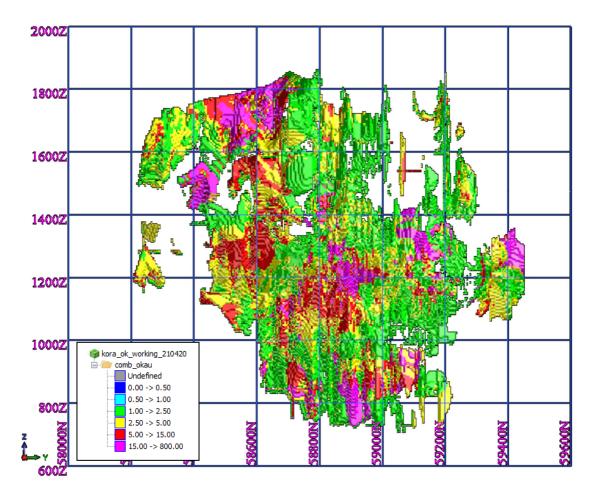


Figure 70. K2 Lode Mineral Resources Gold Long Section 1g/t Cut Off (H&SC)

(view: looking west)

An example of the gold block grade distribution for the K1 lode at a 2g/t gold cut off is included as Figure 71. It demonstrates the reasonable coherency and continuity of the mineralization at higher grades. A similar figure is generated for the K2 lode.

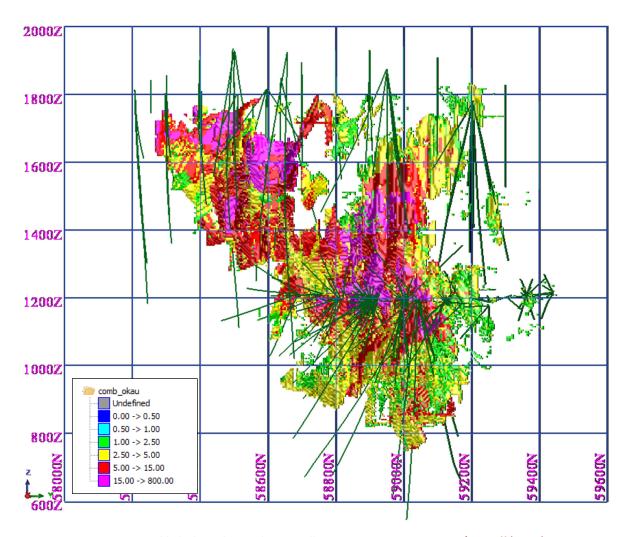


Figure 71. K1 Gold Block Grade Distribution All Categories Long Section 2g/t cut off (H&SC)

To complete the resource reporting K92ML requested that the global MRE be reported for a range of cut off grades (Table 46).

Table 46. Kora & Kora North Mineral Resources for a Range of Gold Cut Off Grades

Total Me	Total Measured & Indicated								
Au cut off	Mt	Au g/t	Cu %	Ag g/t	AuEq g/t	Au Mozs	Cu Kt	Ag Mozs	AuEq Mozs
0	3.5	8.53	0.58	14.2	9.46	0.96	20.3	1.6	1.1
1	3.1	9.47	0.61	15.3	10.45	0.95	19.0	1.5	1.0
2	2.5	11.55	0.64	16.8	12.58	0.92	16.0	1.3	1.0
3	1.9	14.11	0.68	18.7	15.22	0.88	13.2	1.2	0.9
4	1.6	16.72	0.71	20.5	17.89	0.83	11.0	1.0	0.9
5	1.3	19.29	0.74	22.5	20.51	0.80	9.5	0.9	0.8
6	1.1	21.71	0.76	24.3	22.98	0.76	8.3	0.9	0.8
7	1.0	23.97	0.78	25.6	25.27	0.73	7.4	0.8	0.8
8	0.8	26.05	0.79	26.9	27.38	0.71	6.7	0.7	0.7
9	0.8	28.04	0.81	28.2	29.41	0.68	6.1	0.7	0.7
10	0.7	30.06	0.82	29.5	31.45	0.66	5.6	0.6	0.7

Inferred									
Au cut off	Mt	Au g/t	Cu %	Ag g/t	AuEq g/t	Au Mozs	Cu Kt	Ag Mozs	AuEq Mozs
0	17.5	5.46	0.98	16.9	6.96	3.07	170.4	9.5	3.9
1	12.7	7.32	1.10	19.9	9.01	2.98	139.5	8.1	3.7
2	8.8	9.89	1.25	23.1	11.82	2.80	110.2	6.5	3.3
3	6.5	12.60	1.33	25.0	14.66	2.61	86.1	5.2	3.0
4	5.1	15.11	1.36	26.1	17.22	2.46	69.0	4.3	2.8
5	4.1	17.63	1.38	27.0	19.78	2.32	56.6	3.5	2.6
6	3.4	20.26	1.38	27.7	22.40	2.19	46.3	3.0	2.4
7	2.8	23.01	1.33	28.7	25.09	2.08	37.3	2.6	2.3
8	2.4	25.86	1.28	29.7	27.89	1.97	30.3	2.3	2.1
9	2.1	28.41	1.26	30.7	30.41	1.89	25.9	2.0	2.0
10	1.8	31.50	1.21	32.0	33.44	1.80	21.5	1.8	1.9

Figure 72 contains the above data as a set of grade tonnage curves for the total Measured and Indicated Resources. Figure 73 contains the above data as a set of grade tonnage curves for the total Inferred Resources.



Figure 72. Kora & Kora North Grade Tonnage Curves for Total Measured and Indicated Resources

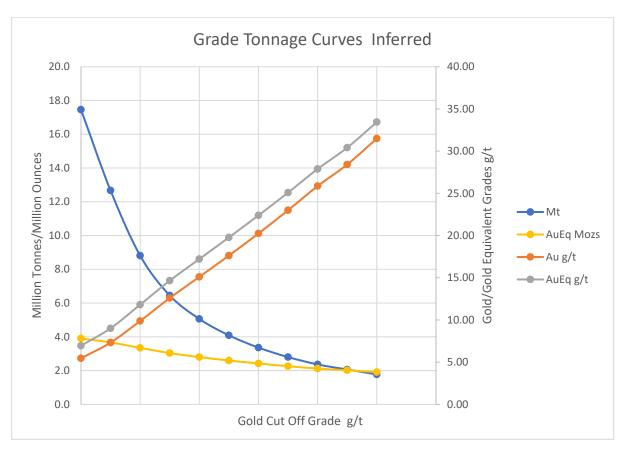


Figure 73. Kora & Kora North Grade Tonnage Curves for Inferred Resources

For the purposes of announcing the new global MRE (Table 47) a 1g/t gold cut off was used with an effective date of April 2<sup>nd</sup> 2020.

Table 47. Kora Consolidated Global Mineral Resources for a 1g/t Gold Cut Off

Global									
Category	Mt	Au g/t	Au Moz	Ag ppm	Ag Moz	Cu %	Cu Kt	Au_Eq g/t	Au_Eq Moz
Measured	0.66	13.34	0.28	11.6	0.25	0.51	3.4	14.14	0.3
Indicated	2.47	8.44	0.67	16.3	1.29	0.63	15.6	9.46	0.8
Total M & I	3.13	9.47	0.95	15.3	1.54	0.61	19.0	10.45	1.1
Inferred	12.67	7.32	2.98	19.9	8.11	1.10	139.4	9.01	3.7

(minor rounding)

# 15 MINERAL RESERVE ESTIMATES

This item is not applicable for this report.

#### 16 MINING METHODS

## 16.1 BACKGROUND

As previously explained in the January 2019 PEA for Kora<sup>1</sup>, K92ML made a strategic decision in early 2018 to cease mining activities in the historical Irumafimpa mining area and to devote its resources instead to development of and production from the Kora deposit. This decision was driven by the more favourable characteristics of Kora compared to Irumafimpa including: -

- Greater confidence in stope definition,
- Generally better ground conditions,
- Higher grades, and
- More tonnes per longitudinal area and hence greater productive capacity.

Exploitation of this area has subsequently been the focus of K92ML for mining during 2018, 2019 and 2020, providing mill feed and gold production. K92ML is building up production from the northern end of Kora while continuing to advance the footwall access and exploration development towards the southern extent.

The mine is currently ramping up from Stage 1 operations of 200ktpa, with production planned to increase to 400ktpa in 2021 for Stage 2, before the Stage 3 expansion to 1Mtpa in 2024. The mine plan and PEA estimates are for mining operations from 1 January 2021 onwards, including the project expansion from 400ktpa to 1Mtpa. The production estimates exclude those parts of the Mineral Resources that were, or are planned to be, extracted between 1 April 2020 and 31 December 2020.

A new twin-incline access is being developed from a new portal area to provide a dedicated haulage-way and more efficient materials handling for the Kora deposit. Completion of this infrastructure, along with associated ventilation and orebody access development, will support a production rate of 1Mtpa.

The proposed mining method for Kora is described in Figure 75, Figure 76, Figure 77 and Figure 78. Please note that 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.

The January 2019 PEA was for Kora North and Kora Mineral Resources, which were previously defined as separate deposits. However, resource drilling has linked these two areas as a single continuous mineralised zone and the latest Mineral Resource Estimate and the current PEA mine plan now refer to the combined deposit simply as Kora.

### 16.2 KORA GEOMETRY

In May and June 2020 AMDAD prepared a mine design for the Kora mineralisation based on the May 2020 Mineral Resource Estimate by H&S Consultants (H&SC). Kora comprises five modelled sub-vertical and sub-parallel mineralisation zones; from east to west K1, K Link (KL1, KL2 and KL3) and K2 as shown in the Figure 74. At a 1g/t cutoff the mineralisation ranges typically from 1m in width up to 10m in width.

<sup>&</sup>lt;sup>1</sup> The January 2019 PEA was for Kora North and Kora Mineral Resources, which were previously defined as separate deposits. However, resource drilling has linked these two areas as a single continuous mineralised zone and the latest Mineral Resource Estimate and the current PEA mine plan now refer to the combined deposit simply as Kora.

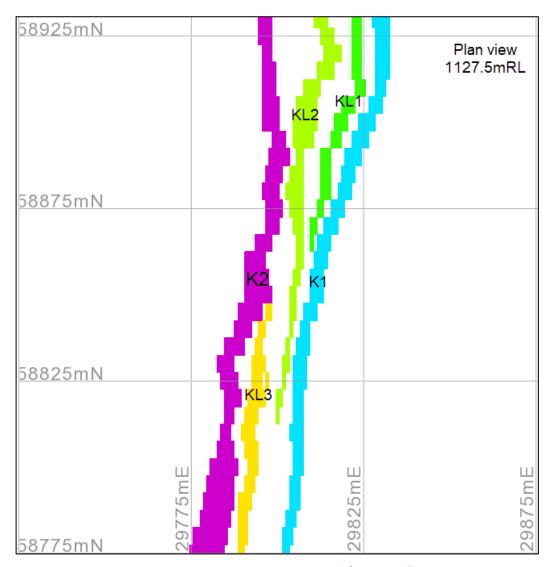


Figure 74. Kora Mineralisation above a 1g/t gold cutoff

# 16.3 KORA MINING METHOD SELECTION

# 16.3.1 Kora mining experience to-date

Commencing in 2018, mining by K92ML in K1 and K2 veins has demonstrated variable ground conditions ranging from poor to good. K1 has poorer ground conditions compared to K2, mainly due to a fault or clay gouge structure on the western wall (hangingwall) of the K1 vein. Previously, the instability associated with the gouge led to wall exposures being limited to a maximum of 5m in height, and the use of cut and fill mining for K1 and also for KL. The cut and fill stopes have been extracted in 2.5m high lifts mined by air-leg, and then by mechanised drill jumbo, as shown in the figure below.

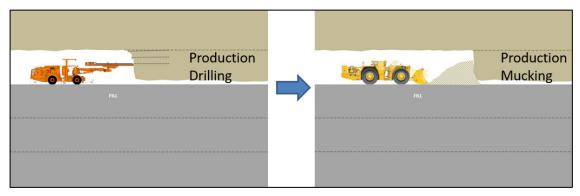


Figure 75. Mechanised Cut and fill method

In conjunction with on-going geotechnical assessments, K92ML successfully trialled longhole stoping in early 2020 and is transitioning to this method for K1 and KL. Specific measures to address the hangingwall gouge are critical to the success of longhole stoping of the zones where this structure is present.

Initially, K2 was mined by cut and fill for production assurance reasons. However, with ground conditions in K2 clearly suitable for longhole stoping, K2 is also transitioning to this method.

## **16.3.2** Preliminary Geotechnical Assessment

Oreteck Mining Solutions (OTMS) (2020a) conducted a preliminary geotechnical investigation into stable open stoping dimensions for the Kora K1 and K2 orebodies. This included consideration of the 20m level spacing, to provide confidence for ongoing design and development.

The assessment was based on limited logging data supplied by K92ML as well as OTMS's underground observations. OTMS provided estimates for stable stope lengths at the 25<sup>th</sup> and 50<sup>th</sup> percentiles, based on 20m level spacing, floor-to-floor, corresponding to a 25m effective stope height. These results are shown in the Table 48 and Table 49:

	Hangingwal	Crown length (m)		
Confidence	Unsupported	Supported	max. 15m wide	
25 <sup>th</sup> percentile	13	15	16	
50 <sup>th</sup> percentile	14.5	17	19	

Table 48. K1 orebody stable dimensions estimated by OTMS

Table 49. K2 orebody stable unsupported dimensions estimated by OTMS

Confidence	Hangingwall length (m)	Crown length (m) max. 15m wide
25 <sup>th</sup> percentile	19	17
50 <sup>th</sup> percentile	25.5	27

OTMS's preliminary assessment for K1 assumes that a skin of competent material will be left against the clay gouge in the hangingwall (HW) of the orebody. OTMS notes that if the skin is breached or fails significant dilution is expected.

As noted below in section 16.5 Design and Evaluation, the clay gouge zone is currently not well defined or modelled for application in preliminary stope design using the CAE Mineable Shape Optimiser (MSO) program. This zone may also have grades significantly above the economic cutoff grade and in these cases, it would be preferable to include the gouge within the stope where feasible. For the purpose of the PEA mine plan the preliminary stope designs have therefore not been constrained to stand off from the gouge, but instead a higher dilution has been assigned for K1. In addition, a plan is in place to install additional ground support including considerable cable bolting of the HW.

# 16.3.3 Feasibility Study Geotechnical Program

OTMS (2020b) has proposed a program of geotechnical work to provide suitable data and analysis for the upcoming Feasibility Study mine planning. The main five tasks of the program are summarised below:

#### 16.3.3.1 Task 1: Geotechnical Data Collection

K92ML will continue full geotechnical logging of historical and current drill holes to address current limitations of geotechnical data. Diamond drill core will be orientated to define rock mass joint sets and regional structural

information. The collection of structural data on the location and thickness of the clay gouge structure relative to the K1 orebody and the link structures between K1 and K2 are critical to selection of the mining method/configuration, ore drive stability and design of stable stope spans.

## 16.3.3.2 Task 2: Geotechnical Data Review and Compilation

The latest geotechnical logging data will be reviewed and compiled into the necessary format for inclusion into the existing geotechnical model, which will form the bases for determining development ground support requirements and feed into the stable stope spans on a spatial perspective.

## 16.3.3.3 Task 3: Update geotechnical model

The updated rock mass characterisation, geological structure wireframes, rock mass structural data and point load test results will be used to update and refine the geotechnical rock mass model. An emphasis will be placed on the occurrence of the weak clay gouge zone and link structures that are expected to influence the stability of development drives and stoping.

### 16.3.3.4 Task 4: Geotechnical Assessment

## K1 Mining Method Selection

Further investigation is required to determine the preferred mining method or combination of mining methods for K1 by assessing the following options currently under consideration:

- o Carry the clay gouge in the ore drive,
- o Leave a stand-off in the ore drive and expose the clay gouge in the stope; or
- o Leave a stand-off from the clay gouge in the ore drive and the stope.
- Development location
- Mining sequence
- Stope dimensions
- Backfill Requirements
- Dilution estimates
- Ground support requirements

## 16.3.3.5 Task 5: Numerical modelling

Mine scale elastic numerical modelling is recommended to assess the overall proposed mine layout. This will include the proposed mining sequence to analyse potential interactions of underground excavations, decline standoff distance from stoping, expected induced stress fields, impact of the clay gouge, link structures and required minimum pillar dimensions between K1 and K2, expected development conditions and ground support requirements.

# 16.3.4 Proposed Mining Method

Although longhole stoping represents a considerably larger scale of mining than cut and fill, it is still a relatively selective mining method which allows extraction of high grade, yet relatively narrow, ore zones. The longhole stoping method, shown schematically in the Figure 76, is based on drilling and blasting ore in vertical rings from drives spaced 20m apart vertically, floor-to-floor, forming stopes 25m high. Stope widths will range from 3m to 15m and strike lengths will vary depending on localised ground conditions.

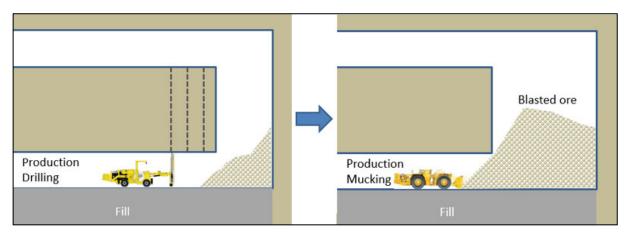


Figure 76. Longhole Stoping Method

The average stope width generated using the MSO program is 5.2m, with most stopes less than 8m in width and only 8% of the shapes being greater than 8m wide.

Stopes will be extracted along strike initially in a bottom-up sequence with each stope progressively backfilled for stability and to provide a working base for the next stope above. The Avoca method would be used to limit the strike length of the open stope to maintain stability of the side walls and backs. Stopes will be progressively backfilled from the opposite end to where the stope is being blasted and loaded out as shown in the Figure 77.

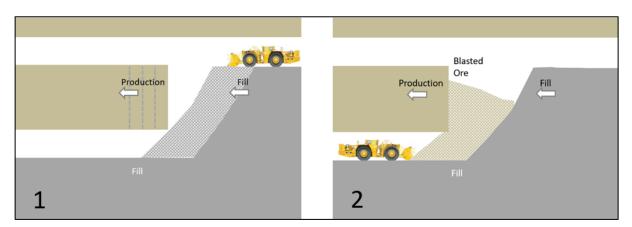


Figure 77. Avoca Longhole Stoping Method

Where access is not available to both ends of a stope the Modified Avoca method will be used, as depicted in the Figure 78. This method involves tight filling the stope against the ore face after each firing has been loaded out. The next ore blast can be fired against the tight-placed fill, or the fill can be partly mucked out to provide expansion space for the blast. Although Modified Avoca requires less lateral development, it has a lower productivity rate and higher filling costs.

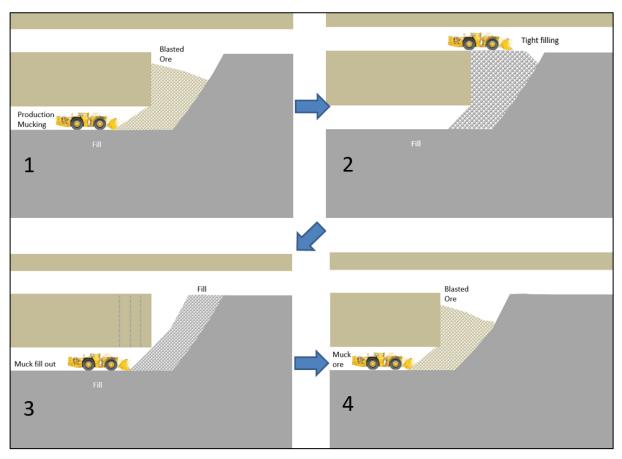


Figure 78. Modified Avoca Method

Currently, development waste rock or "mullock" is used to backfill the stopes. However, K92ML is planning to construct a paste fill plant that will use filtered tailings from the processing plant to deliver paste fill to the mine.

Once the paste fill plant is operational, unconsolidated mullock fill will be replaced by cemented paste fill. This will provide greater flexibility in stope sequencing as well as in drilling and blasting. With cemented paste fill, stopes can be mined in a top-down direction as well as bottom-up. Top down mining in combination with paste fill will reduce the risk of self-propagation within the clay gauge zone versus bottom-up mining techniques; the risk will be mitigated by providing a beam of engineered fill overhead.

Although cemented paste fill offers greater stope scheduling flexibility, the preparation work prior to filling, plus cement curing time post-filling, will increase overall filling cycle times.

# 16.4 MINING DILUTION AND RECOVERY

AMDAD applied two dilution adjustments to the PEA mine plan tonnes and grades:

- A 0.5m dilution skin was applied to the stope shape footwall and to the hangingwall (total of 1.0m skin) using the MSO program. This dilution was applied at the grade defined for these skins within the resource model.
- A percentage factor was then applied to the stope tonnes and grades defined by MSO to account for external dilution from sources such as fill or additional falloff. A default of 8% was applied, however this value was increased to 12% for K1 which has a higher likelihood of hangingwall dilution from instability associated with the clay gouge. These factors are conceptual allowances for additional material at zero grade, agreed between K92ML and AMDAD for the purpose of the PEA.

The two dilution factors discussed have been conservatively applied to both longhole stopes and cut & fill stopes for this PEA. Further optimisation will be undertaken in the subsequent feasibility study.

The assumed overall dilution ranges from 21% to 41% based on the average widths for the different orebodies, as shown in the table below.

**Table 50. Dilution assumptions** 

Parameter	K1	KL1	KL2	KL3	K2	For COG
fw + hw skin, m	1.0	1.0	1.0	1.0	1.0	1.0
MSO average width, m	5.9	3.3	4.1	8.5	6.1	5.1
% Dilution (skin)	17%	30%	24%	12%	16%	19.6%
% Dilution other	12%	8%	8%	8%	8%	8%
Total % Dilution	31%	41%	34%	21%	26%	29.2%

The last column of the Table 50 also shows a dilution of 29.2% based on an overall average stope width of 5.1m determined from an initial MSO run. AMDAD applied this dilution in calculating the cutoff grade for the insitu resource.

AMDAD applied a simple 90% factor to adjust for mining recovery. This is considered to be lower than typical for stable longhole stoping and makes some allowance for situations such as the following:

- Stand-off from the clay gouge in K1 is unavoidable,
- Stope must be abandoned prior to full extraction, or
- A buttress pillar or other pillar must be left insitu for stability

These factors will be assessed and revised as data are gathered, experience gained, and techniques trialled and adopted to mitigate dilution and loss.

### 16.5 DESIGN AND EVALUATION METHOD

AMDAD completed the following tasks to prepare and evaluate the PEA mine design:

- Applied financial and processing parameters to determine an appropriate cut-off grade for stope design.
- Generated 3-D stope shapes using the MSO program, and
- Prepared a preliminary development layout to suit the MSO stopes.

Environmental Resources Management (ERM), formerly known as CSA Global, on behalf of K92ML, then prepared a life of mine (LOM) schedule for K92ML using the Deswik program, based on AMDAD's design. The LOM schedule is the basis for the cashflows forming the preliminary economic assessment.

## 16.5.1 Key Project Parameters

Key project assumptions for determining the mine plan are documented in a separate report by AMDAD (2020). The inputs, in addition to the mining dilution and recovery adjustments, were based on preliminary data provided by K92ML.

The initial mining cost estimate provided by K92ML is based on the following strategy:

- Continued transition from cut and fill to predominantly longhole stoping. This will coincide with the implementation of the paste fill plant system.
- As a proportion of total production tonnes, longhole stoping has the benefit of involving less development on and around the gouge compared with cut and fill.

- The preferred mining method approach, subject to geotechnical validation, is top-down longhole stoping with cemented paste fill; this method will mitigate the risk of upward progression of any "self-mining" failure associated with the gouge zone. Top-down sequencing is also beneficial for water management.
- LOM tonnes for the PEA will notionally be 20% cut and fill and 80% longhole stoping.

The operating costs estimated for this PEA are based on a 1Mtpa operation. For the ramp up periods 2021 to 2024, higher operating costs are used in the evaluation model, which are factored to reflect the production rate.

## 16.5.2 Cutoff Grade

# 16.5.2.1 Marginal Economic Cutoff Grade

As a starting point in determining the cutoff grade to be applied in the MSO program, a marginal economic cutoff was calculated using the preliminary mining, processing and economic assumptions provided by K92ML to AMDAD (2020). 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 marginal economic cutoff grade would maximise the undiscounted cash value of the operation when it is applied at the point for which the downstream costs have been determined.

The cutoff grade calculation does not include capital costs for items such as access development, which are effectively sunk costs when considering how to maximise the value stopes accessed. The access costs are considered in the second step of evaluation, once stopes have been defined, to ensure that stopes can cover those access costs, and should be included in the mine plan.

The cutoff grade calculation defines a head grade cutoff of 2.38g/t gold equivalent (AuEq) that can be applied to the grade of ore loaded out from stopes, as well as a resource cutoff of 3.04g/t AuEq, applied to the grade of insitu resources, which also makes allowance for dilution.

		0 1 1 1 1
Parameter	Unit	Value
Net value of Au in ore	US\$/g	40.46
Cut-off head grade	g/t AuEq	2.38
Cut-off resource grade	g/t AuEq	3.04

Table 51. Gold equivalent marginal economic cutoff grades

The cutoff shown in Table 51 is a gold equivalent (AuEq) cutoff that is applied to AuEq grades. AMDAD assigned AuEq grades to the mining block model and for PEA reporting by applying the multipliers shown in Table 52 to the gold, silver and copper grades. The AuEq multipliers, shown in Table 52, were calculated from the preliminary metal recoveries, prices, selling costs and gold net value.

Table 52. Gold equivalence multipliers

Metal	Unit	Net Value	AuEq Multiplier
Ag	US\$/g/t	0.39	0.0096
Cu	US\$/%	60.51	1.495

## 16.5.2.2 Optimised Cutoff Grade

To identify the optimised cutoff grade for the PEA mine plan, the following steps were undertaken:

1. Stope shapes were generated using the MSO program at a range of gold equivalent cutoff grades from 3.0 g/t to 6.0 g/t in 0.5 g/t increments.

- 2. Life of mine tonnes and grade were determined for each cutoff grade scenario, including adjustment for external dilution and mining recovery.
- 3. A simple schedule was prepared to provide an estimated pre-tax cashflow and pre-tax discounted cashflow (pre-tax DCF) for each cutoff grade scenario. The schedules and associated cashflows are considered simplified as they merely use the average diluted grade for each cutoff grade scenario as a constant grade for each year over the life of mine. The schedules and cashflows do not reflect the yearly variations in grade and metal output that would result from specific stope sequencing in a detailed schedule and in practice.
- 4. The pre-tax DCFs for each cut-off grade were compared and the scenario yielding the highest pre-tax DCF was selected as the optimal cut-off grade.

The results of the evaluation are summarised in Table 53, Figure 79 and Figure 80 below. Please note that the net pre-tax cashflows and pre-tax DCFs presented in the table below should not be interpreted as estimates for the value of the project. They are conceptual cashflows based on the inputs described above that have been estimated with a high degree of uncertainty. These pre-tax cashflows and pre-tax DCFs were prepared to rank the different cutoff grade scenarios as a basis for selecting an optimised cutoff.

The results indicate that a cutoff grade of 5.5g/t AuEq is likely to generate the highest pre-tax DCF<sub>5%</sub> and K92ML has selected this cutoff grade for the PEA mine plan on that basis.

Table 53. Key parameters from COG evaluation

COG	Tonnes	Contained		Gra	ade		Tonnes	AuEq	Life	Cashflow	Pre-Tax DCF <sub>5%</sub>
g/t AuEq	Mt	AuEq Moz	g/t AuEq	g/t Au	% Cu	g/t Ag	<sup>2</sup> reduction	<sup>2</sup> reduction	Years	\$M	\$M
3.0	14.19	3.83	8.4	7.0	0.87	15.8			17	2,512	1,633
3.5	12.50	3.69	9.2	7.8	0.90	16.5	11.9%	3.6%	15	2,510	1,701
4.0	11.11	3.56	10.0	8.5	0.94	17.2	11.1%	3.5%	14	2,490	1,747
4.5	9.97	3.44	10.7	9.2	0.97	17.8	10.2%	3.4%	13	2,464	1,779
5.0	8.89	3.31	11.6	10.0	1.00	18.5	10.9%	3.9%	12	2,427	1,799
5.5	8.26	3.27	12.3	10.7	1.01	19.0	7.0%	1.1%	11	2,457	1,849
6.0	7.31	3.09	13.1	11.5	1.05	19.7	11.5%	5.6%	10	2,359	1,818

-

 $<sup>^{\</sup>rm 2}$  Incremental % reduction for successive COG scenarios

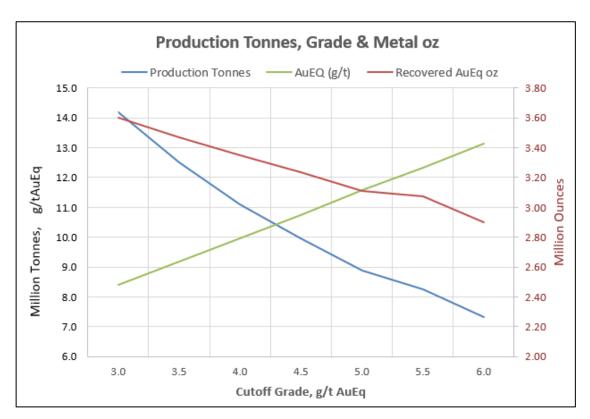


Figure 79. Chart showing production tonnes, grade and metal for each cutoff grade scenario

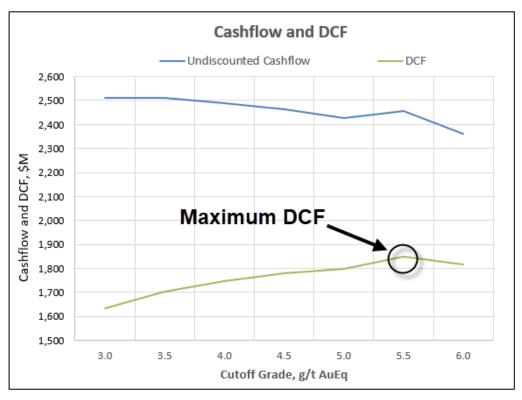


Figure 80. Chart showing conceptual cashflow and Pre-Tax DCF for each cutoff grade scenario

"Incremental" stoping material, material that is below the optimal cut-off grade of 5.5 g/t AuEq but above the marginal economic cut-off grade of 3.04 g/t AuEq, will be further investigated in the feasibility study and potentially increase the total project ore tonnes, metal and pre-tax DCF. In the current PEA, only incremental material found in concentrated zones was included in the mine plan and scheduled at the end of the mine schedule. An optimized scheduling process will be undertaken in the feasibility study to evaluate the viability of

mining additional incremental material by considering the milling capacity, fleet capacity, and determining whether to process or stockpile any additional material.

## 16.5.3 Project Ramp-up

The LOM schedule targets production to meet the project ramp-up shown in Table 54 below.

Table 54. Project production ramp up, ktpa

Year	ktpa
2021	400
2022	400
2023	600
2024 to LOM	1000

#### 16.6 STOPE DESIGN

AMDAD used the MSO module in CAE Studio 3 to prepare a conceptual stope design for Kora. MSO automatically produces stope shapes from the resource block model that are economically optimised within specified geometrical and design constraints. Design parameters are shown in Table 55.

Table 55. MSO parameters

Parameter	Units	K1, KL & K2
Optimisation Field		Aueq_amd
Cutoff grade	g/t Aueq_amd	5.5
Default (waste) density	t/m3	2.80
Sub-level Spacing	m (vertical)	20
Section Spacing (min)	m (horizontal)	10
Minimum Stope Width <sup>3</sup>	m	3.0
Maximum Stope Width <sup>3</sup>	m	15.0
Stope Length	m	10.0 or 20.0
Minimum Waste Pillar Width	m	10.0
Hangingwall Dilution	m	0.5
Footwall Dilution	m	0.5
Number Stopes formed		1577

Please note the following in relation to the mining method modelled by MSO:

- AMDAD applied the geometric parameters in the table above to cater primarily for longhole stoping.
   However, the stope shapes can also represent 20m high cut and fill panels.
- A 20m stope length was used as an approximation of the 50<sup>th</sup> percentile stable longhole stope lengths recommended by OTMS 17m for K1 supported and 25.5m for K2 unsupported. In practice, K1 stopes may be shorter than this while K2 stopes may be longer.
- As the clay gouge zone is currently not defined as a suitable model for application in MSO, the preliminary stope designs have not been constrained to stand off from the gouge. The K1 western extent has been driven

<sup>&</sup>lt;sup>3</sup> The minimum and maximum stope widths include the dilution skin.

simply by grade. In some cases, K1 may combine with KL to form a wider stope, with the gouge zone potentially more centrally positioned within the stope.

The resultant stope shapes, prior to any adjustment, are shown in the following Figures 81 to 83. Corresponding estimates of resource tonnes and grade within the stope shapes totalling approximately 8.5Mt, are summarised in Table 56.

Please note that although the stope shapes include skin dilution, the tabulated tonnes and grade do not represent an estimate of Mineral Reserves.

Table 56. MSO unadjusted stope shape tonnes and grades, 5.5g/t AuEq cutoff

Vein	kt	g/t AuEq	g/t Au	g/t Ag	% Cu
K1	3,851	11.90	10.29	13.74	1.05
KL1	0	0.00	0.00	0.00	0.00
KL2	8	8.80	7.94	9.80	0.54
KL3	46	7.96	7.05	11.38	0.57
K2	4,401	14.72	12.83	26.95	1.18
Other/Minor	188	10.47	9.96	13.17	0.27
Total	8,495	13.31	11.58	20.56	1.10

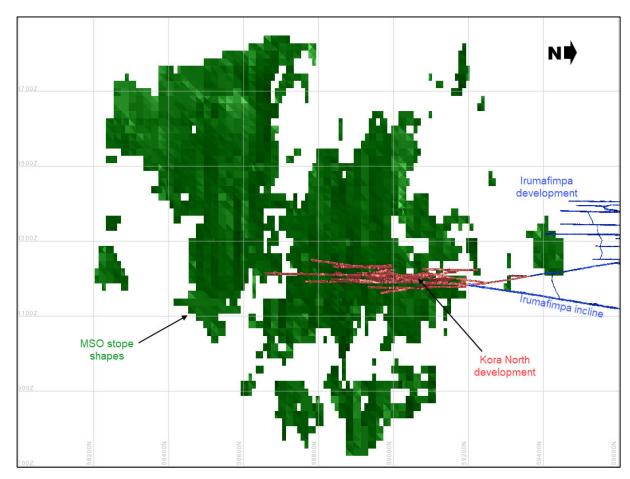


Figure 81. MSO shapes with current voids and existing development, 5.5g/t AuEq cutoff, longitudinal view

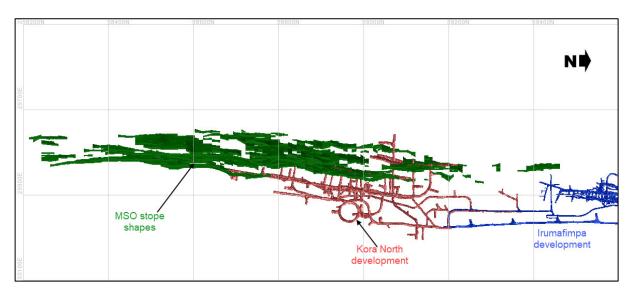


Figure 82. MSO shapes with current voids and existing development, 5.5g/t AuEq cutoff, plan view

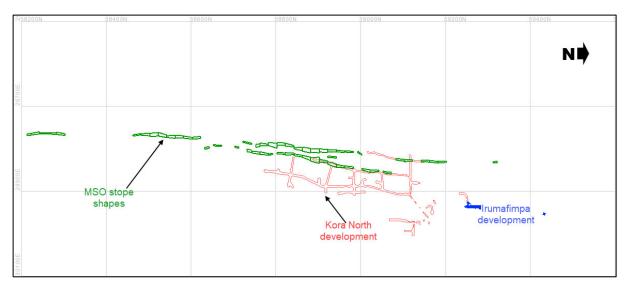


Figure 83. MSO shapes with current voids and existing development, 5.5g/t AuEq cutoff, plan view at 1190mRL

The Kora LOM plan with 5.5g/t AuEq cutoff is a selected subset of these stopes with the following adjustments, reducing the total to approximately 8.1Mt:

- Uneconomic stopes that don't pay for the access and development costs were removed
- Any MSO shapes created along the existing voids were removed.
- Any MSO stopes planned to be mined during 2020 calendar year were removed
- All 1176 to 1190mRL stopes were removed north of 58650N to provide a crown pillar for stope mining during 2020 2021.
- External dilution was added to adjust for unexpected fall-off and for loading out ore against backfill walls and floors. Assumed fill dilution is 8% for K2 stopes, and 12% for K1.
- 90% mining recovery applied. This is notionally an average of 87.5% for K1/KL and 92.5% for K2, simplistically assuming a 50/50 tonnes split.

The revised subset of 5.5g/t AuEq cutoff MSO shapes and quantities used for the LOM plan are shown in Figure 84 and Table 57.

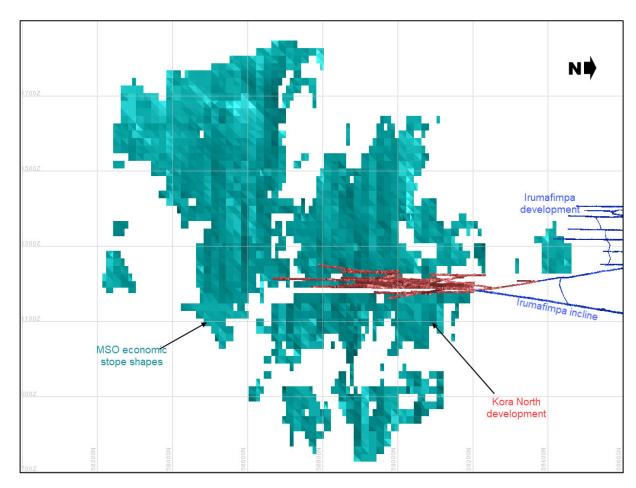


Figure 84. Economic MSO shapes for the LOM plan, 5.5g/t AuEq cutoff, longitudinal view looking west

Table 57. Revised economic stope shape tonnes and grades at 5.5g/t AuEq cutoff for LOM schedule.

Vein	kt	g/t AuEq	g/t Au	g/t Ag	% Cu
K1	3,652	11.62	9.95	14.26	1.10
KL1	0	0.00	0.00	0.00	0.00
KL2	4	9.26	8.40	11.99	0.53
KL3	34	7.84	7.29	7.72	0.34
K2	4,186	15.01	13.16	26.15	1.14
Other/Minor	178	10.57	10.09	12.88	0.25
Total	8,054	13.33	11.60	20.35	1.09

NB: This does not represent a Mineral Reserve estimate.

## **16.7 DEVELOPMENT**

## 16.7.1 Development Concept

The mine plan makes use of existing Irumafimpa development and recent Kora exploration development, and in particular the existing incline, to provide access to the orebody for stope production activities.

As a starting point for the PEA mine plan for 1<sup>st</sup> Jan 2021, K92ML provided AMDAD with its short-term designs for development for the remainder of 2020. The LOM production is also dependent on excavation of the following new development that AMDAD has incorporated in the PEA mine plan:

### 16.7.2 Lateral Development

- A twin incline Haulage-way is being mined from a new portal north of the existing portal at 841mRL.
  - Ore from Kora will be delivered via orepass to the new Haulage-way.
  - One of the twin drives will be a dedicated haulage drive while the other will facilitate ventilation, drainage and provide a second means of emergency egress.
- A Northern Incline and Southern Incline will extend upwards from the existing development levels to the top
  of the mineable resource.
- A Central Decline will be developed down from 1142mRL. Once the twin incline Haulage-way is established from the 841mRL portal, the Central Decline can also be mined up and down from 900mRL.
- A footwall drive will be established on each level, with ancillary development including stockpiles, loading bays, access to ventilation and orepass rises and cross-cut orebody accesses to K1, KL and K2 stopes
- Orebody strike-drives for K1, KL and K2
- Miscellaneous development including recesses for sumps, and drill cuddies.

### 16.7.3 Vertical Development

- A 4.0m diameter raisebored Central Return Air Raise (RAR) will be developed from 1267mRL to surface.
- A Northern RAR and Southern RAR will be developed to surface to service the upper inclines in conjunction with the Central RAR. These are also 4.0m diameter raisebored raises.
- Two 4.0m diameter raisebored Fresh Air Raises (FARs) will also be developed to surface to service the Northern and Southern Inclines and also to provide fresh secondary air onto each level.
- The Central and Northern RARs will be linked to the lower Central and lower Northern RAR extended below current development to service all development and production associated with the Central Decline. These are mined as 4.0m x 4.0m long hole winzes (LHW).
- A 4.0m x 4.0m LHW FAR system will be developed with the lower section of the Central Decline linking into the Irumafimpa Incline and twin incline Haulage-way.
- A Northern, Central and Southern Orepass System will be developed from the twin incline Haulage-way to the top of the mine. Most ore can be transported down through the Orepass System to 900 level where trucks can be loaded. All ore and mullock below 900 level will be trucked up to the twin incline Haulage-way.

### 16.7.4 Development Design

AMDAD created a centreline development design for the LOM plan in consultation with K92ML personnel. K92ML provided AMDAD with the proposed 2020 May to December design. The 2021 onwards development layout is shown in Figure 85 and Figure 86 below.

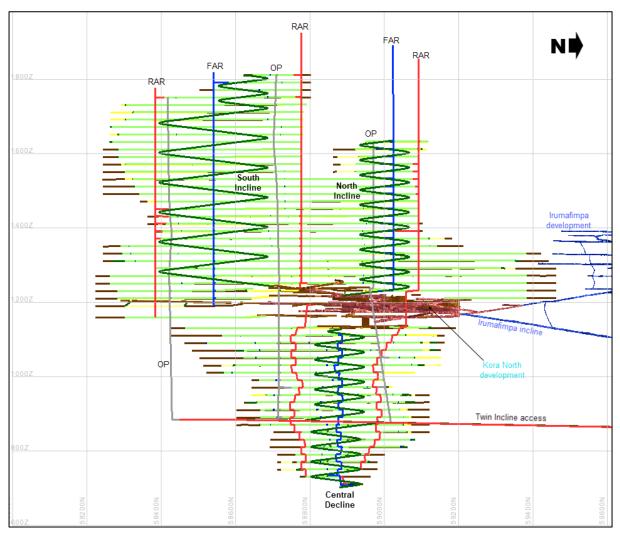


Figure 85. Kora development layout, longitudinal view looking west

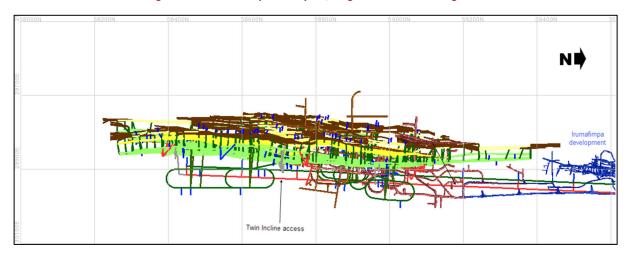


Figure 86. Kora development layout, plan view

The development lengths are summarised in Table 58 below:

Table 58. Kora development lengths (m)

Туре	Length (m)
Decline / Incline	13,936
Level access	5,046
Footwall drives	26,819
Stockpile/Loading bays	4,237
Crosscuts	13,379
Orebody development	44,998
Ventilation access	7,746
Orepass access	2,323
Total Lateral Development	118,485
Return air raises	2,816
Fresh air raises	1,538
Orepass raises	2,597
Total Vertical Development	6,951

### 16.8 BACKFILL STRATEGY

For 2021 and 2022, waste rock from Kora development will be the primary backfill material used to fill stopes when available. Exploration development or surface waste rock will be the alternative fill sources when local development waste is unavailable.

A paste fill plant will be constructed during 2022 and most stopes from 2023 onwards will be paste filled. Design of the paste fill system will be a key component of the Feasibility Study, including tailings/paste testwork, paste plant design and all costing related to the delivery system.

## 16.9 MINING EQUIPMENT AND INFRASTRUCTURE

## 16.9.1 Mining Equipment

K92ML has upgraded their mobile fleet on site over the last year, whereby they now have the capability to achieve the planned development and production for years 2020 to 2022. Further purchases and replacement will be required with the ramp up to 600ktpa in 2023 and then 1Mtpa in 2024. Table 59 below shows the current mobile equipment fleet that are or will be on site during 2020.

Table 59. Mobile equipment on site for Jan 2021

Туре	Number
45t UG trucks	3
17t bucket UG loader	3
Twin boom jumbos	5
30t UG truck	3
Long hole UG drill	1
UG grader	1
IT loaders	2
Emulsion charger	1
UG cement truck	2

Туре	Number
UG diamond drill rigs	3
Modular Batching plan	1
Shotcrete spraying machine	2
Service Support truck	1
Cable bolter	1
12t bucket UG loader	2

Examples of newly arrived equipment on site are shown below:



Figure 87. New 45t CAT AD45 truck and 17t Sandvik loader



Figure 88. LM90 diamond drill rig



Figure 89. Sandvik DD422i drill jumbo



Figure 90. Sandvik DL421 longhole production drill rig

# 16.9.2 Mining Infrastructure

K92ML restarted mining operations at Kainantu site in 2016 and infrastructure is in place to service the initial mine development and production activities. Recently completed infrastructure work to support scheduled production is listed below. Ventilation infrastructure is described in section 16.10. The upcoming Feasibility Study will include an assessment of additional infrastructure required at peak operating capacity, particularly the underground electrical infrastructure.

- New Kora "Gravity" Dewatering System
- Upgraded Primary vent system
- Bulk Emulsion charging implemented
- Underground Power reticulation upgrade
- New Workshop and Offices at Portal construction underway



Figure 91. Mine Portal Workshop under construction

## 16.9.3 Dewatering and Water Inflows

ATC Williams (ATCW) (2020a) conducted a preliminary site visit and hydrogeological investigation in February 2020 as an initial step in the hydrogeological assessment of the underground mine. A summary of ATCW's preliminary findings is provided below.

Due to local topography, hydrogeological conditions are complex. Factors that influence recharge include localised recharge areas and inter-connectivity with regional aquifer systems. Associated structures are not fully mapped and estimates of inflow potential into the underground is subject to further analysis. Due to surface outcropping of the ore body and potential fracturing associated with this unit can act as a direct recharge area. Creek beds intersect the outcropping ore body on surface, and these zones could be considered as elevated influx zones. Seasonal inflow along these preferential pathways have been noted by site staff and chemical tracing should be completed to assist in verifying the source of inflow water. Inter-connectivity between regional aquifers has not been characterised to date, but work is currently underway to clarify the linkage with regional groundwater resources.

Observations during the ATCW site visit indicate inflows into the underground workings occur along faults and fracture zones. Water is internally diverted within the mine workings to sumps that direct the water by gravity and/or submersible electric pumps to larger collection dams before being discharged by gravity flow at surface at the 800mRL Portal. ATCW estimated an underground mine discharge of approximately 200 l/s during the site visit. Discharge estimates will be confirmed following development of a hydrogeological model and detailed water balance study of the mine.

The source of water in the mine workings cannot be conclusively determined at this stage, although inflows from the ore zone could be observed. The ore zone represents a complex hydrogeological environment due to the presence of vuggy zones and other structural units that could rapidly transmit water. In addition, the presence of fines and weak clay-like material was observed that would hinder flow along the periphery of the structure. These clay units and vuggy zones are variable and is likely due to the deposition environment of the ore body. The presence of fracture zones and faults can also result in an asymmetric groundwater setting with preferential flow paths.

Host rock adjacent to the ore body has a reduced permeability and could represent a confining unit. In sections, drilling through this host rock resulted in the production of water which indicates the presence of water bearing structures. However, due to the complex geological setting of the ore body localised no-flow zones cannot be excluded.

Site-based mapping and observations will continue, and the data will be used to support the development of a hydrogeological model.

Once mine water inflows are estimated at a higher level of confidence, appropriate infrastructure will be designed and constructed to collect and transport the water from the workings to surface. As well as addressing the capacity of the existing gravity discharge system, this will also investigate requirements for pumping water up from collection points in the deeper sections of the mine.

### **16.10 VENTILATION**

The ventilation system is being upgraded in three stages over the duration of the project.

### 16.10.1 Stage 1: Ventilation for current Kora operations

To cater for the current level of production, the primary ventilation system was recently upgraded with a 100% increase in airflow. The current system is outlined below.

 As shown in Figure 92, ventilation for the northern end of Kora is currently effected by two 55 kW fans exhausting at the 1325mRL Puma Portal, which draw fresh air up the Main Incline from the 800mRL Portal.
 Fans at the "1185mRL Junction" of the Main Incline and Puma Incline drive ventilation through the Kora workings.

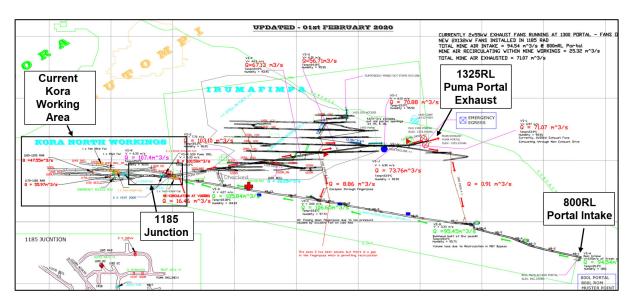


Figure 92. Current mine ventilation and services

- As shown in Figure 93, airflow is directed through the Kora workings by the ventilation arrangement at the 1185mRL Junction, including the following components:
  - A Return Air Drive (RAD) has been developed south from the Puma Incline parallel to the 1185mRL Footwall Drive. Return Air Rises (RARs) link to this drive to extract return air from the production levels above and below this RAD.
  - Twin 132kW fans have been installed on the exhaust side, where the RAD drive connects to the Puma Incline
  - Double vent doors between the Main Incline and Puma Incline just south of the RAD intersection prevent short-circuiting and ensure that the intake air is channelled to the Kora workings and returns through the RAD.
- This arrangement currently achieves an airflow of approximately 100m<sup>3</sup>/s.

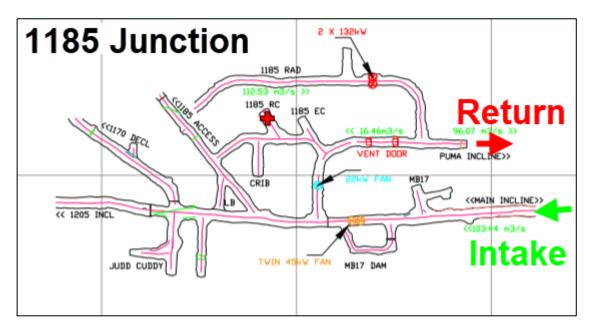


Figure 93. 1185 junction ventilation arrangement

## 16.10.2 Stage 2: Setting up main ventilation system for Kora

The following ventilation infrastructure will be established in the build up towards full production at Kora:

- A central 4.0m diameter RAR will be developed from 1268mRL to surface. This will link with existing RAR development. The upper Northern and Southern Inclines will be serviced by the Central RAR initially until the Northern and Southern RARs are developed.
- The Central Decline below existing development will initially use the lower Central RAR, which is linked to existing RAR development.
- The twin incline Haulage-way will serve as a key part of the primary ventilation system with one incline delivering fresh air and the other exhausting return air.

## 16.10.3 Stage 3: LOM main ventilation system for Kora

The final ventilation system will include the following:

- A Northern and Southern 4.0m diameter RAR mined from 1247mRL and 1176mRL respectively to surface.
- A Northern and Southern 4.0m diameter FAR mined 1247mRL and 1207mRL respectively to surface.
- A Central and Northern 4.0m x 4.0m RAR system mined from 1147mRL to the base of the mine.
- A Central 4.0m x 4.0m FAR system mined from 1147mRL to the base of the mine.
- Fresh air via the existing Irumafimpa incline and one of the Haulage-way twin inclines.
- The other Haulage-way incline can be used for return air or fresh air depending on the needs of the mine.

The ventilation overall concept is shown in Figure 94, Figure 95 and Figure 96:

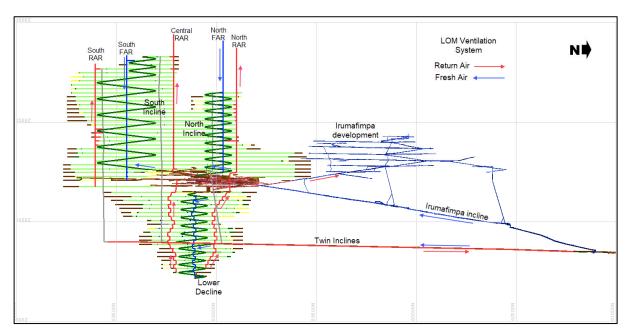


Figure 94. Longitudinal view of ventilation network

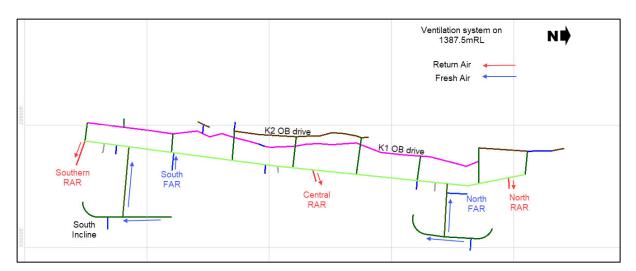


Figure 95. Plan view of ventilation network at 1387 mRL

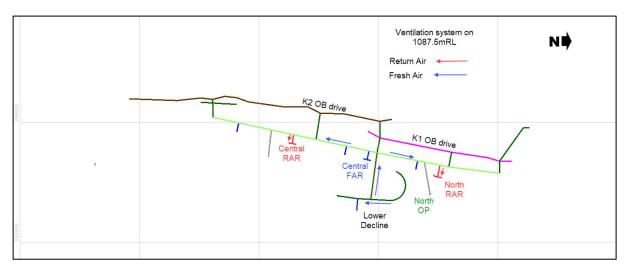


Figure 96. Plan view of ventilation network at 1087 mRL

Further, more detailed studies will be completed in the Feasibility Study phase to confirm the most appropriate ventilation design and fan requirements for the 1Mtpa operation.

#### **16.11 KORA LIFE OF MINE SCHEDULE**

ERM prepared the LOM schedule in quarterly periods using the Deswik program. AMDAD then adjusted the schedule in Excel to align with K92ML's current forecasts for 2020.

### 16.11.1 Mining Sequence

The PEA LOM schedule uses a bottom-up production sequence until 2024, then transitions to a combination of both bottom-up and top-down for the remaining LOM. Top-down sequencing, enabled by the introduction of cemented paste fill, provides greater flexibility in sequencing in order to optimise the LOM schedule and cashflow profile.

#### 16.11.2 Schedule Parameters

The Kora LOM plan is based on the following targets:

- Ramp up production in 2021 and 2022 to 400ktpa targeting 150koz contained AuEq in mill feed per annum.
- Ramp up production during 2023 to 600kt targeting 180koz contained AuEq in mill feed or greater.
- Full production target of 1Mtpa from 2024 onwards targeting 300koz contained AuEq in mill feed per annum or greater.

The schedules prepared for the Kora stoping and development mine plan used the parameters in Table 60.

Parameter Value Units Twin inclines on 840mRL 160 metres adv. /month Declines, Inclines and Lateral waste 80 metres adv. /month Orebody drives (per heading) metres adv. /month 60 Maximum development 1.200 metres adv. /month Raiseboring and LHW 4 m/day 800 t/day Stoping **Production targets** 2021 and 2022 400 kt mill feed /yr 2023 600 kt mill feed /yr 2024 onwards 1,000 kt mill feed /yr

**Table 60. Schedule parameters** 

The maximum development rate assumes that five development jumbos will be required during the maximum development periods. The following strategy was adopted to maximise production rate:

To target higher grade stopes the northern incline and lower decline are prioritised.

Year 2021 of the project will involve:

- Continuation of the current development areas at northern part of Kora.
- Development of the upper inclines and lower decline.
- Mining of the twin inclines.

• Continue using the existing ventilation network and extend as required.

Years 2022 - 2023 of the project will involve:

- Establishment of 1<sup>st</sup> RAR rise to surface to expand the primary ventilation circuit.
  - o A further three ventilation rises mined to surface.
- Twin inclines established and 1st orepass mined to the 900 level.
- Stoping to continue on previous levels and also start on 1130, 1270, 1290, 1310 and 1330 levels

Years 2024 onwards of the project will involve:

- Establishment of all raisebored rises to surface for the primary ventilation circuit.
  - o Establish the two RAR's and Central FAR below the current workings to the base of the mine
- Establish the Southern, Central and Northern Orepass system to 900mRL level.
- Establish a second mining area on 1350 level to maintain 1Mtpa.
- Establish stoping areas both above and below the 900mRL level.

As noted above, AMDAD adjusted the final Deswik schedule prepared by ERM to reflect the production targets nominated by K92ML. The Deswik schedule shows sufficient development completed in the initial three years to bring forward production tonnes from the first quarters in 2021, 2022 and 2023 into the preceding year. K92ML has confirmed that these targets for the initial years are realistic.

In the last years of the LOM schedule AMDAD has also added incremental lower grade stopes that were not part of the 5.5g/t AuEQ cutoff mine plan but were defined as economic in earlier MSO modelling using the 3.04g/t AuEQ marginal economic COG. For the purpose of the PEA, only those lower grade stopes within significant contiguous zones were included. Those zones are defined by the polygons shown in the Figure 97.

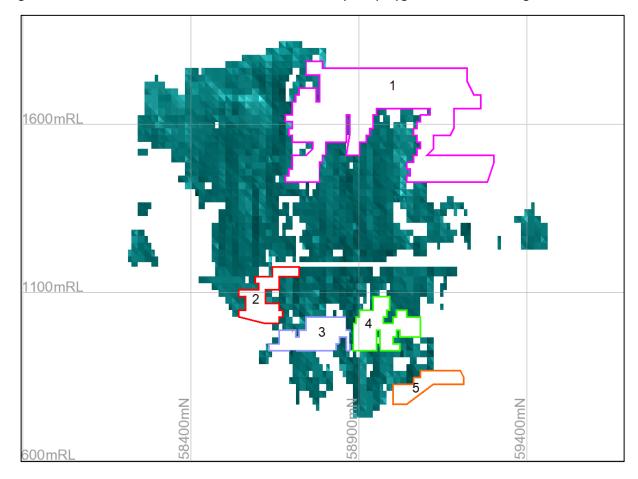


Figure 97. Additional low grade areas added to LOM plan

For the incremental lower grade stopes the bottom 4.5m of each stope lift or 22.5% of the tonnes represents development tonnes that are assumed to be mined with 100% recovery and no dilution. The remaining production tonnes have been adjusted by applying 15% dilution and 80% mining recovery. The reduced recovery allows for inability to access some stopes around old stopes. Table 61 shows the estimated tonnes and grade of lower grade stopes after this adjustment.

Table 61. Low grade material added to the LOM plan

Polygon	kt	g/t AuEq	g/t Au	g/t Ag	% Cu
1	802	3.33	1.94	15.58	0.88
2	99	3.34	2.24	9.03	0.73
3	333	3.29	2.25	11.21	0.66
4	278	3.48	2.99	7.31	0.30
5	66	3.27	2.53	13.32	0.44
Total	1,578	3.35	2.23	12.69	0.70

Table 62 and Figure 98 summarise the LOM development schedule. The development lengths include factored allowances for development for the lower grade stopes at the end of the mine life.

Table 62. Development summary by year

Туре	Total	2021	2022	2023	2024	2025	2026
	m	m	m	m	m	m	m
Waste	73,487	9,364	10,031	10,406	8,218	9,658	8,704
Orebody	44,998	2,451	3,791	3,228	5,997	4,614	5,362
Total	118,485	11,814	13,822	13,634	14,216	14,272	14,065
m/month		985	1,152	1,136	1,185	1,189	1,172
Vertical	6,951	1,654	1,634	1,285	718	406	517

Туре	2027	2028	2029	2030	2031	2032
	m	m	m	m	m	m
Waste	4,879	4,902	5,071	2,255	0	0
Orebody	5,185	3,341	3,510	4,161	2,685	671
Total	10,064	8,243	8,581	6,416	2,685	671
m/month	839	687	715	535	224	56
Vertical	250	205	181	102	0	0

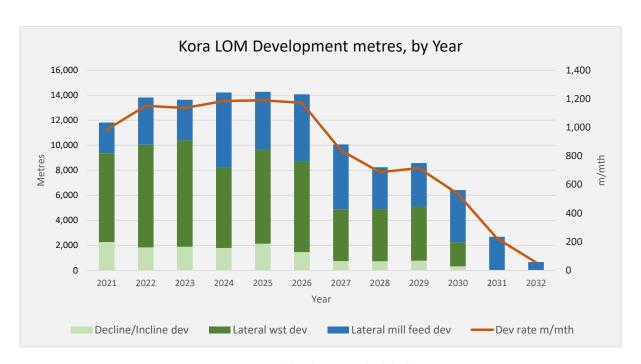


Figure 98. Lateral development schedule, by year

Table 63 and Figure 99 summarise the LOM Mill Feed schedule. These tonnes and grades do not represent a Mineral Reserve estimate.

Table 63. Mill feed summary, by source

Туре	Total	2021	2022	2023	2024	2025
Dev, kt	2,240	149	152	137	306	204
Stope, kt	7,549	247	249	404	566	781
Total, kt	9,789	396	401	542	872	985
AuEq g/t	10.58	11.88	11.71	10.28	8.80	10.99
AuEq, koz.	3,259	151	151	179	247	348

Туре	2026	2027	2028	2029	2030	2031	2032
Dev, kt	251	246	188	196	222	151	38
Stope, kt	751	758	804	805	778	849	555
Total, kt	1,003	1,004	992	1,001	1,000	1,000	593
AuEq g/t	10.49	11.50	11.08	10.43	11.03	10.33	5.10
AuEq, koz.	338	371	354	336	355	322	97

NB: development mill feed also includes any development within the mineralisation with gold equivalent grade above 3.5g/t. This grade is higher than the marginal economic cutoff for development in order to achieve the required mill feed and contained gold targets.

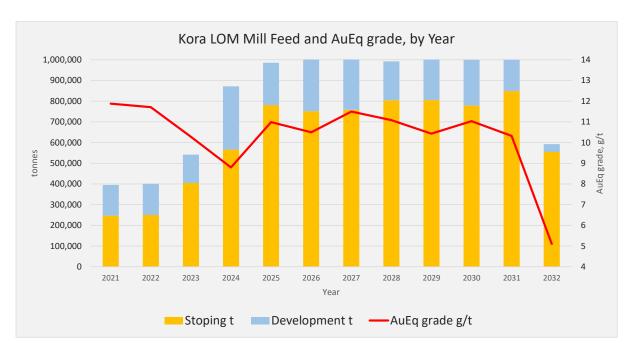


Figure 99. Mill feed schedule, by year

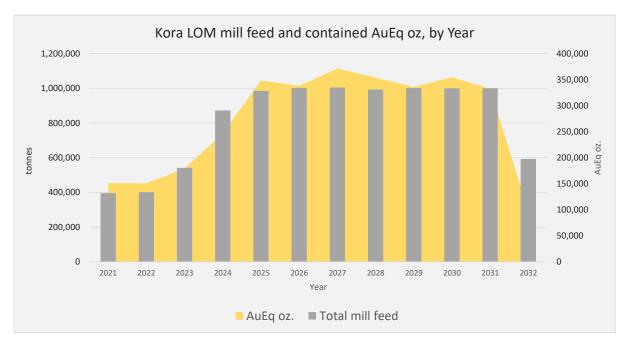


Figure 100. Kora tonnes and gold ounces in mill feed, by year



Figure 101. Kora total material movement, by year

Table 64 below shows the resource category breakdown within the combined LOM schedule.

Table 64. Resource category component within the LOM plan

Measured	Indicated	Inferred
5%	14%	81%

## 16.11.3 Risks and Uncertainty to the Kora Mine Plan

There is a considerable level of risk and uncertainty to achievement of the Kora Mine Plan presented above, including estimated tonnes and grade and production rate. Key risks, uncertainties and required further work are summarised in Section 25.6 Risk Assessment. The work to address these risks and uncertainties includes studies to be undertaken as part of a Feasibility Study program to commence in the second half of 2020 and to be completed in 2021.

## 17 RECOVERY METHODS

## 17.1 INTRODUCTION

The proposed 1Mtpa processing plant uses conventional processing equipment for recovery of valuable sulphides from a copper sulphide deposit.

The processing plant will consist of the following unit processes (Figure 102):

- Ore receiving and single stage crushing
- Grinding and classification
- Flash flotation and gravity circuit for recovery of free gold
- Conventional sulphide flotation
- · Concentrate thickening, filtering, drying and load out
- Reagent storage and mixing
- Plant services (compressed air and water)
- · Tailings handling

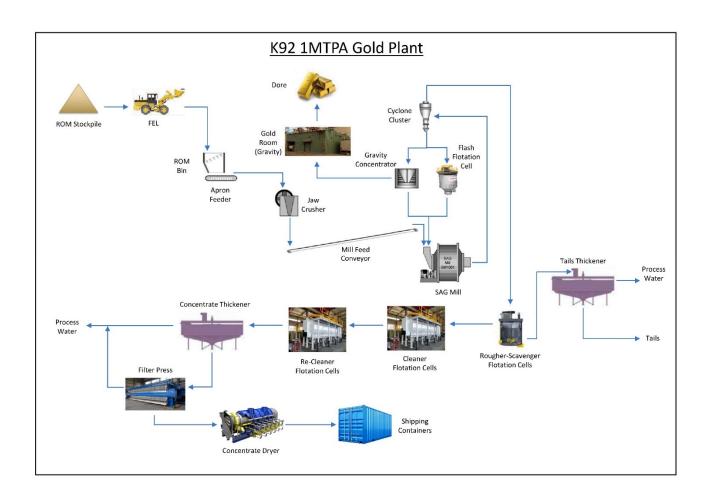


Figure 102. Kainantu 1Mtpa Treatment Plant Schematic Flowsheet

Source: Mincore (2020)

## 17.2 PROPOSED PROCESSING PLANT

With the new 1 Mtpa processing plant it is expected that recovery improvements will be realised, achieving 95% Au, 95% Cu and 77% Ag recoveries.

## 17.2.1 ROM Pad and Crushing

ROM ore will be delivered to an enlarged ROM ore pad. The required seven (7) days storage on the ROM pad will be achieved by small extension of the existing ROM pad for the current plant. Should the current plant and scrubber be recommissioned in the future, then the need for a larger pad can be reconsidered at that time.

ROM ore will be fed over a static grizzly into a crusher bin by a front end loader. Provision has been made for direct truck tipping as well. A static rock breaker has been allowed for in the capital estimate.

An apron feeder will then feed a single toggle jaw crusher to crush to a nominal P80 of 90mm.

The crusher has been sized on 6,500 operating hours per year.

Ahead of the crusher, a finger grizzly will remove fines and reduce the load on the crusher.

One static and one self-cleaning magnet have been allowed for, to capture tramp metal.

### **17.2.2** Milling

Crushed product will be fed into a SAG mill (6.7m x 5.0m) with installed power of 4MW. The mill motor will have a variable speed drive and will drive through a conventional gear box, pinion and ring gear arrangement.

A plough arrangement on the SAG mill feed conveyor will plough off part of the crushed material for stockpiling and re-feeding to the SAG mill when the crusher is unavailable due to maintenance, etc. Scats from the SAG mill discharge are recycled to the feed with the option to divert to a scats bunker if required. Provision in the layout has been made for a pebble crusher if required in the future.

SAG mill discharge is pumped to a nest of (12) twelve Cavex CVX250 cyclones. It is expected that (10) ten will be operational at any one time. Cyclone overflow (80% passing  $75\mu m$ ) reports to a trash screen and then a flotation conditioning tank ahead of flotation. Fifteen minutes of conditioning residence time has been allowed to remove surges to the rougher flotation bank of cells. Cyclone underflow returns to the mill for further grinding. A cut of the cyclone underflow stream passes over a scalping screen with 2mm apertures and is then split between a flash flotation cell and a 30" Falcon Concentrator. Tails from the flash flotation cell and Falcon concentrator combine with the cyclone underflow balance for further grinding.

## 17.2.3 Flash Flotation and Gravity Concentrate

The flash flotation concentrate reports directly to the concentrate thickener. Falcon concentrate gravitates to a new gold room where it is upgraded over two shaking tables before the final concentrate is dried and smelted to produce gold dore bars. The number and size of the Flash Flotation units will be further investigated during the Feasibility Study stage to maximise the gold recovery.

### 17.2.4 Flotation

The flotation configuration consists of a bank of six rougher scavenger tank cells. Concentrate from the first four cells reports to the cleaner cells while concentrate from the remaining two cells reports to the feed to the third rougher cell. A residence time of 30 minutes rougher plus 15 minutes scavenger has been allowed for in sizing the rougher scavenger cells. Further, flotation sizing is based on the flash flotation cell being off-line. Tails from the final scavenger cell are pumped to tails thickener for handling by others.

Rougher concentrate reports to a conditioning tank with 10 minutes residence time to remove surges ahead of the flotation cleaning circuit for further upgrading of the concentrate. Tails from the cleaner flotation report to the feed of the third rougher cell. Tails from the recleaner flotation report back to the head of the cleaner flotation.

Residence time in the cleaner cells is 15 minutes and 20 minutes in the recleaner cells. Trough type cells have been selected for the cleaner and recleaner duty.

# 17.2.5 Concentrate Thickening, Filtration and Drying

Final cleaner concentrate combines with the flash flotation concentrate and is thickened in a high rate thickener to 65% solids before being pumped to a concentrate storage tank ahead of filtering. The concentrate storage tank will have a live storage volume equivalent to 24 hours production to allow for fluctuations in concentrate production and maintenance. A vertical plate and frame filter similar to that currently used in the existing plant,

has been selected and sized based on 17 operating hours per day.

The filter cake (15% moisture or better) can then be processed in one of two ways:

- a) Filter cake is dried in an indirect diesel fired dryer to 5% moisture and discharged to a fixed conveyor loading a moveable retractable conveyor. This then loads a shipping container positioned over load cells, in loading bay No 1, to accurately determine the mass of concentrate in the shipping container, or
- b) Wet Filter cake is discharged to a fixed bypass conveyor which then loads the moveable retractable conveyor. This then loads a shipping container positioned over load cells, in loading bay No 2, to accurately determine the mass of concentrate in the shipping container.

The loaded containers are then out loaded either to trucks (for export to smelters off site) or to the loaded container storage area where there is an area suitable for 2 days storage.

## 17.2.6 Reagents

A standard suite of reagents for sulphide flotation as currently used on site will be used in the new flotation plant, subject to the reagent screening testwork recommended.

Reagents will include:

- pH Control hydrated lime \*
- Collector potassium amyl xanthate (PAX) \*
- Depressant carboxy methyl cellulose (CMC) for fluorine depression #
- Frother methyl isobutyl carbinol (MIBC) #
- Flocculent anionic polyacrylamide (SNF AN 923 SH, or equivalent) \*
- Promoter sodium diisobutyl monothiophosphate (Aero 6697) \*

## 17.2.7 Tailings Handling

The tailings from the final scavenger flotation cell are currently pumped to the tailings dam with a solid content of 34% (w/w) and an average deposited dry density of 1.4 t/m<sup>3</sup>.

Flotation tailings from the new and expanded plant will be thickened in a high rate thickener. The thickener overflow reports to a process water transfer tank at a flow rate of approximately 300m<sup>3</sup>/hr that is then pumped back to the SAG mill as process water feed.

The thickener underflow is pumped to the tailings storage facility or to the mine backfill system depending on the mine stope void area available for paste back fill. Figure 103 shows the Process Flow Diagram for the Tailings Management System.

<sup>\*</sup> Powder Mixing, # Liquid System

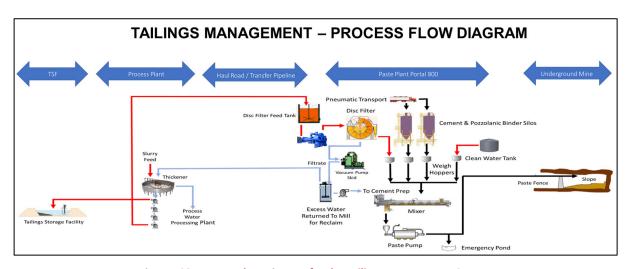


Figure 103. Process Flow Diagram for the Tailings Management System

The paste backfill is a mix of filtered tailings, binder, thickener underflow slurry, reagents, and water in measured quantities to achieve the desired density for pumping and strength. The assumed paste composition is shown in the figure below and determined from the mass balance to achieve the required density.

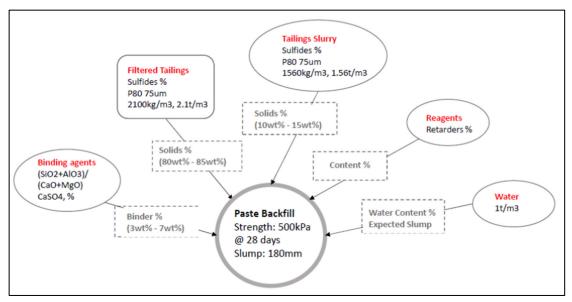


Figure 104. Paste Composition

The filter cake is produced by disc filter dewatering further the tailings delivered from the thickener underflow. Considering the lower capex, opex and equipment size, disc filters have been initially selected, however further analysis will be completed at the next phase of study. The filtration is using a vacuum pump to produce the filtered cake that contains 15 to 20% moisture content.

The binder typically used for paste backfill is a cement mix with other binding additives such as fly ash, lime, slag and gypsum to bond or draw other materials together to form a cohesive cost-effective structure. The more cement added to the paste, the greater the strength of the paste backfill. Reagents are used to slow the reaction time of the paste backfill. Water may be added to adjust the paste density and slump given the varying feed from the filtered tailing and slurry.

The location of the tailings dewatering system and paste plant for backfill has considered different locations, such as 800 portal, 1400 portal. The 1400 portal 1400 has been excluded at this stage due to the higher and longer pumping distance, difficulty to supply power, binder and more difficult access. The thickener is best located at the process plant, where the underflow can be easily directed to the TSF if necessary. Thickened tailings can be safely pumped 6km from the processing plant to the 800 portal. The location of the disc filters and paste plant

are preferred outside the 800 portal. The paste will be pumped to the required mining areas. The underground reticulation system will be detailed at the next phase of study.

The water recovered at the 800 portal will be sent back to the processing plant or the TSF.

For the next phase there are some key points that need to be investigated:

- Testing on paste composition for strength and pumpability
- Integrated design work with the mining team
- Storage options for the excess tailings
- Finalising the location of the paste plant

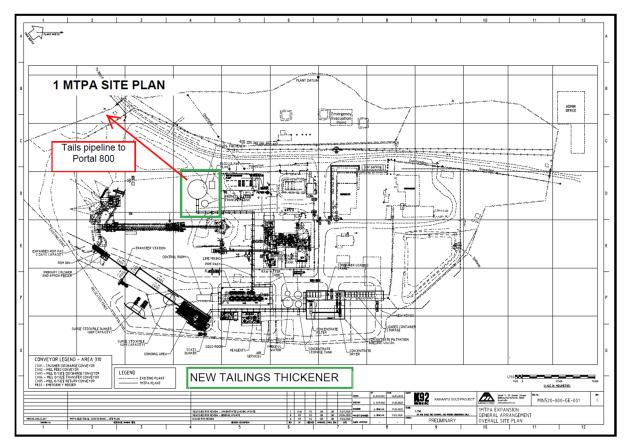


Figure 105. Site Plan for new Tailings Thickener

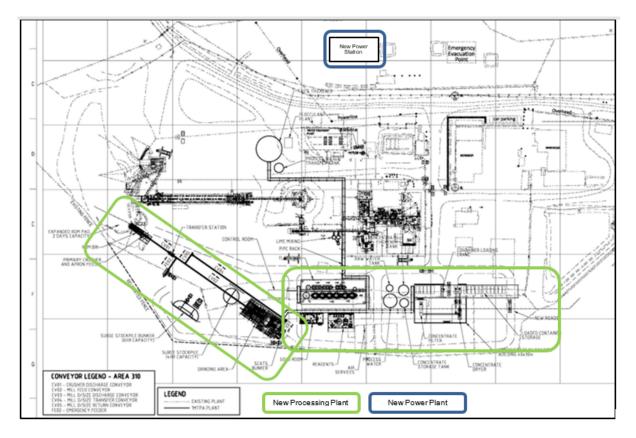
# 17.3 PLANT BUILDINGS AND MOBILE FLEET

The new 1Mtpa plant will be constructed adjacent to the existing plant and utilise existing site infrastructure where possible.

The existing facilities which will continue to be used include:

- Assay laboratory
- Stores warehouse
- Plant administration office
- Plant workshops (one of the small workshops may need to be relocated)
- Plant mobile equipment such as crane, loader(s) forklifts and vehicles

A new Control Room Building (modular) is included in the 1Mtpa Plant Design.



New Power Station

Figure 106. Kainantu 1Mtpa Treatment Plant SiteLayout

Source: Mincore (2020)

## **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 exists on the property.

# **18.1 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 secondary source will be a new Centralised Diesel Power Plant of 13MW capacity with spinning reserve and redundancy. The new power station will have sufficient capacity to provide full coverage for the new 1Mtpa processing plant and underground mine power demand

Power from the national grid is reticulated to site via 22kV overhead line and services both plant and camp area. The 22kV will then step down to 11kV via two new 22/11kV 7.5MVA Main Transformers at the new 22kV Main Switchyard. A new 11kV Substation which includes an 11kV Main Switchgear will reticulate 11kV to the Underground 800 Portal and the new 1Mtpa Processing Plant. Automatic changeover between grid and diesel generation power will be installed on the main 11kV Switchgear.

The cost of generating from diesel is reflected in the unit power cost of AU\$0.22 (US\$0.154) in the operating cost.

#### **18.2 WATER**

Process water will be recovered from the concentrate thickener, concentrate filter, tailings thickener and tailings filter(s).

A plant water balance has been developed as part of the Process Mass Balance. The make-up water will be from mine dewatering.

Potable water is drawn from two existing bore wells supplemented by water harvested from building roofs. The water is channeled into tanks, chlorinated and filtered for use.

An additional Water Treatment Plant has been allowed for to provide potable water for the new 1Mtpa Plant.

Raw water for use by minor equipment will be primarily sourced from diverted discharge from the underground mine.

### 18.3 UNDERGROUND 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 of underground mining infrastructure commenced.

In March 2019, K92 announced the decision to implement the Kora Expansion Project, with the aim of doubling throughput from 200,000 tpa to 400,000 tpa and production by 2020.

Since this decision the mining fleet has undergone a significant expansion and modernization. The fleet expansion included an increase in the quantity of equipment and also a significant increase in size of equipment.

Equipment added and operational during 2019 included: two Caterpillar 45t UG Trucks; one Sandvik 17t Bucket UG Loader; one Underground Grader; two IT Loaders and two Twin Boom Jumbos.

Additional equipment onsite in early 2020 includes: a Sandvik LH517i UG LHD loader; a Sandvik DL421-15C long hole production drill rig; a Sandvik DD422i twin boom development jumbo; and a Minecat integrated emulsion charging unit

Kainantu's underground mine infrastructure was considerably upgraded and expanded during 2019 with several key projects completed including:

- Installation of two 132 kW fans replacing the two 55 kW fans in December 2019. This represents a ~3x increase in fan power. The primary underground ventilation flow-rates have increased more than 100%.
- The Main Incline debottlenecking program was completed in 2019, with parts of the incline widened and the excavation of three bypass drives to improve traffic management and equipment efficiencies.
- New underground magazine at the 1210 mRL level was 90% complete by December 2019.
- A bulk emulsion charging system was implemented during 2019, increasing development advance rates by over 0.5m per cut. Kainantu was the first mine in PNG to introduce full underground emulsion charging systems.
- Seven sublevels were established in 2019 between 1150 mRL to 1245 mRL. This resulted in a considerable increase in mine operational flexibility. In 2018, Kainantu had only three sublevels established, and the majority of production came from the 1205 mRL level.

There are several additional projects underway including:

- Construction of an equipment maintenance workshop and office at the mine portal, with completion of office expected in early in 2020 and completion of workshop expected in July 2020.
- Installation of a new high-tech underground communications system including Wi-Fi, personnel tracking, advanced remote equipment communications and real-time safety tracking system with completion expected early in 2020.

The following mining infrastructure is in place as summarised below:

### 18.3.1 800 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 with a 1250kVA diesel generator and a transformer to provide sufficient backup power to the underground operations during PPL power outages.
- Workshop and secure storerooms
- Reinforced underground portal
- Ore Stockpile and Waste Dump.
- Early earthworks for the two 3-km twin inclines have commenced with incline development planned to commence in 2020.

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 107. Aerial view of 800 Portal Infrastructure (July 2020)

# 18.3.2 Underground Mine Workings

The Underground Mine comprises:

- 800 Portal, Upper 1300 Portal and 1300 Puma Exhaust Portal.
- Over 6 km of 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 working levels are constructed at 4m x 4.6m.

- The Irumafimpa old workings between the 1205mRL and the 1425mRL were developed with footwall drives, ore development drives, ancillary crosscuts and stoping development. The working levels are constructed at 3m x 3.5m.
- A 315mm dewatering pipeline to handle drainage water from Kora North to the 800 Portal.
- A 415V compressor is installed close to the Kora North workings
- 6 x Refuge Chambers service the underground workings.



Figure 108. 800 Portal (2019)

Most of the infrastructure at the Upper 1300 Portal, which had been used during early mine operations, has been removed from the site

The Puma Exhaust Portal was refurbished in 2016 to provide a second escape way and host the 2 x 132 kW main extraction fans that ventilate the mine.

Following closure of the underground mine in 2009, the majority of the 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.

Additional underground infrastructure for the 1Mtpa operation is described in Section 16.

### 18.4 PROCESSING PLANT

The Kainantu Processing Plant is located approximately 6 km from the opening of the 800 Portal. The plant was on care and maintenance from December 2008 until March 2016 when refurbishment commenced. Commercial production was declared in February 2018.

The original plant 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

Following crushing, screening and grinding the sulphide bearing material is separated from non-mineralized host rock by flotation.



Figure 109. View of Process Plant and office infrastructure area (June 2020)

The process plant is currently being expanded from its capacity of 200,000 tpa to 400,000 tpa. This work includes modifications to the crushing circuit, including installation of a larger secondary crusher, expansion of flotation circuit including installation of a new cleaner-recleaner circuit, upgrade of the process control system, and installation of various ancillary equipment.

The crusher upgrade is largely completed. Installation of the gravity recovery circuit, including gold room, new mill classification circuit and new flotation feed tank has been completed and commissioning is underway. The gravity circuit is designed to treat the entire process stream to maximize recovery of gravity gold.

## 18.5 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. Tailings disposal is completed from the storage wall crest through an HDPE pipeline and tees at 25 metre intervals.



Figure 110. Aerial view of Tailings Storage Facility (May 2020)

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.

Recent dam break assessment has been completed including a site specific Probabilistic Seismic Hazard Analysis (PSHA) and an audit according to the Australian Committee on Large Dams (ANCOLD) in late 2019.

A closure plan was included in the initial design of the storage facility.

## **18.5.1** Tailings Disposal

It is reported that nominally 285,000 tonnes of tailings were produced by the plant during the 2006-2008 production period. 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.

The tailings dam is licenced to operate under an amended Environment Permit EP-L3 (34). With the current permit issued by the Papua New Guinea Conservation and Environment Protection Authority (CEPA) on 12 August 2019. A process of progressive requests for approval is in progress with the Mineral Resources Authority (MRA) for the next TSF wall raises.

A process of progressive requests for approval is in progress with the Mineral Resources Authority (MRA) for the next TSF wall raises.

Tailings disposal is completed from the storage wall crest through an HDPE pipeline and tees at 25 metre intervals.

### 18.5.2 Future Tailings Capacity

Approximately 307,000t of ore was reportedly fed to the plant over the life of the mine during 2006 and 2008, with 93% reporting to the tailings for 285,000t. Assuming a total capacity of 545,000t, and utilisation of 285,000t, the remaining capacity of the TSF in 2009 was estimated at around 238,000t dry or 170,000m<sup>3</sup>. In 2013 Golders estimated a nominal 280,000m<sup>3</sup> capacity remaining based on the observation of 2m remaining freeboard on the TSF wall. Since restarting operations in 2016 approximately 304,000t additional tailings had been deposited into the TSF by the end of 2019.

To increase the storage capacity of the current TSF, a Consultant has been engaged to provide detailed designs for staged TSF raises to 520m RL and a concept design to 530m RL. These designs and planned wall raises are aligned with current operating and the proposed 1Mtpa expansion with co-disposal to mine back fill and TSF.

All future TSF raises will be completed to ANCOLD Guidelines.

#### 18.6 TAILINGS MANAGEMENT

Tailings from the new 1Mtpa plant will be stored in the existing Tails Storage Facility (TSF) and underground mine stopes. A TSF Consultant has been engaged to review the current TSF operating procedures and confirmed they are in accordance with ANCOLD Guidelines. ANCOLD (July 2019 Guidelines) is the Australian National Committee on Large Dams and is the recommended body for Australian Tailings Management Standards for Planning, Design, Construction, Operational and Closure.

### 18.7 SURFACE INFRASTRUCTURE

Additional infrastructure at the property includes bridges over water courses, 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.



Figure 111. Aerial view of Surface Explosives Magazine (July 2020)

## 18.8 ACCOMMODATION CAMP

Accommodation at Kumian Camp (Figure 112) 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 650 personnel after additional accommodation units were installed and constructed during 2019 & 2020. Further expansion is planned. Construction of a new kitchen and mess was completed in 2020.

During construction of the 1Mtpa treatment plant which is scheduled for 8 months the site will have to cater for an average additional 150 construction personnel (based on 60 hour working weeks).



Figure 112. Aerial View of Kumian Accommodation Camp (April 2020)

The National Catering Company (NCS) has signed a joint venture landowner agreement with the local community and provides 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 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.

## 19 MARKET STUDIES AND CONTRACTS

During 2019 K92ML entered into a new offtake agreement with Trafigura covering a 9-year period ending February 11, 2028 or until 165,000 dry metric tonnes ("DMT") of concentrate have been delivered. If the minimum DMT has been delivered during the 9-year period, K92ML is only required to sell 50% of its annual

production until the end of the term. 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 STRATEGY

A conceptual mine plan was prepared by K92ML personnel in March 2019 and submitted to the Conservation and Environment Protection Authority ("CEPA"). This aim of this Mine Closure Plan (MCP) is to outline the conceptual plan for closure of the Kainantu Mine with its existing footprint; and has been developed in accordance with the requirements of the relevant Permits and any K92ML applicable Standards.

It is expected that this conceptual document will be developed, and more detail added closer to the time of Mine Closure. At the time of drafting this conceptual MCP, mine closure was expected to be more than 10 years in the future.

The overall strategy for closure at the Kainantu operation is to extinguish all long-term environmental and legal liabilities and to relinquish the leases to the State government. In order to attain this strategy the operation will be decommissioned with all infrastructure removed from site (unless there has been prior agreement to retain), contaminated areas will be remediated or contained and the remaining landforms rehabilitated so that they are safe, stable and suitable for use in the desired post closure land use. The current basic notional milestones for the mine's closure are outlined in Table 65.

**Table 65. Notional Closure Milestones for the Mine** 

Year	Closure Milestone	
2023	Revision of Mine Closure Plan to align with Resource Model / Life of Mine Plan	
Closure – 2 years	Revision of Mine Closure Plan, stakeholder planning.	
Closure – 1 year	Revision of Mine Closure Plan, active participation in Mine Closure Works.	

To the extent known by Nolidan, there are no known environmental liabilities on the property which are not fully disclosed in the Mine Closure Plan by K92ML dated December 31<sup>st</sup>, 2018, a summary of which is given below.

The un-discounted LOM (Life of Mine) closure cost as at 31 December 2018 was determined as \$6.28m. This estimate was determined by K92ML based on operational changes and a closure review using the Independent Technical Report, Mineral Resource Estimate Update and Preliminary Economic Assessment of Kora North and Kora Gold Deposits, Kainantu Project, Papua New Guinea, dated 07 January 2019 which is filed on Sedar.

Table 66. Mine Closure Costs as at December 31st, 2018

Environmental Reclamation Estimate	USD
Waste rock dumps	34,317
Tailings impoundments	285,292
Roads	2,586
Landfills	3,448
Buildings	155,700
Other demolition	500,000
Equipment removal processing plant	53,000
Sediment ponds	6,900
Backfilling adits, portals and declines	70,000
Shafts	5,000
Surface water channels	21,000
Sediment controls	4,000
Monitor wells	3,000
Solid waste disposal	59,900
Other costs including social Infrastructure and water sampling	1,799,200
Fence removal	77,400
Culvert and buried pipe removal	50,000
Surface pipe removal	100,000
Power lines and substations	440,000
Gabions	100,000
Closure plan technical studies	255,000
Closure plan engineering studies	40,000
Construction management	260,000
Monitoring and maintenance	494,000
Security	1,040,000
Human resources	424,000
Total Mine Closure cost	6,283,743

## 20.2 PERMITS

K92 Mining Limited has obtained or applied for all permits required for the Kainantu mining operations.

# **20.3 ENVIRONMENTAL PERMITS**

Environmental Permits for the Property are for Water Extraction and Waste Discharge. Environmental permits for the site are current until 31 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.
- 20/11/2018; Transfer of Water Extraction WE-L3(13) and Waste Discharge WD-L3(34). from Barrick Kainantu Ltd to K92 Mining Ltd.

• 20/11/2019; Amalgamation of Water Extraction WE-L3(13) and Waste Discharge WD-L3(34) permits into Environment Permit EP-L3 (34) expiring 31 December 2053.

#### 20.4 COMMUNITY IMPACT

K92ML has many long-term social and economic development initiatives in the communities impacted by the mine. A population of approximately 21,000 live in the project impact area of 50 sq.km and this community has limited access to basic health and educational services and facilities.

The company has a growing External Affairs and Sustainable Development ("EA&SD") team involved in exploration access; sustainable community development; women in mining; and business development.

Much of the K92ML EA&SD work is prescribed and guided by the United Nations Development Program Sustainable Development Goals 2030. PNG has adopted these 17 Sustainable Development Goals. K92ML has set targets to ensure that impacted communities will be self-sufficiently able to thrive without dependence upon the mine. Targets include self-sufficiency in water, electricity, health, and education.

Some of K92ML's initiatives to date include:

- Agreements signed between landowner groups and service providers to provide long term supply of services
- Prioritization of Local Hiring: Developing long term and transferrable skills
- Water Supply: Developing and securing safe water supplies
- Regular community meetings with all members and leaders; sponsorship of events
- Infrastructure: Development and upgrading of roads, bridges, travel ways
- Maintenance: Maintaining roads and travel ways for the communities
- Medical Aid posts including medicine and personnel, donations to hospital
- Education: Donations to schools, scholarships



Figure 113. Bridge near Yompossa (Yanabo) Porphyry Prospect (2019)

K92ML supports the development of long-term, sustainable businesses owned by local landowners and has been part of the development of multiple local landowner businesses to supply and support the Kainantu Gold Mine. This includes prioritizing local suppliers and also facilitating the creation of local landowner businesses to support the mine. The Joint Ventures formed are designed to operate for the long term, well beyond the life of the mine and are established so that the local landowners own the plant and equipment plus gain experience from established supplier partners. Joint ventures established to date include those associated with transportation; security; ancillary mobile plant; Kumian Camp services; catering (including sourcing of local ingredients from communities); maintenance services; and exploration support.

# 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 November 2003. This MOA provides for the allocation and use of the royalties derived from the project for the benefit of all stakeholders. The MOA signed in December 2003 remains under review.

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 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. The MOA meeting was held in mid-July 2020, with a range of commitments from the state, province and company to expand the business opportunities and capacity for the Landowner groups. It is anticipated that this process will be completed in 2020 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. .

# 20.6 MEMORANDUM OF UNDERSTANDING (MOU)

HPL signed a Memorandum of Understanding (MOU) on 21 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.

# 20.7 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.

## 20.8 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.

## 20.9 COMPENSATION AGREEMENT

HPL signed a Lands and Environment Compensation Agreement with identified impact communities in June 2003 (Figure 114). 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. Landownership will remain under dispute until the LTC declaration of 2009 is resolved.

K92ML has discussed and agreed with the MRA that the review of the 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 27 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 24 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.

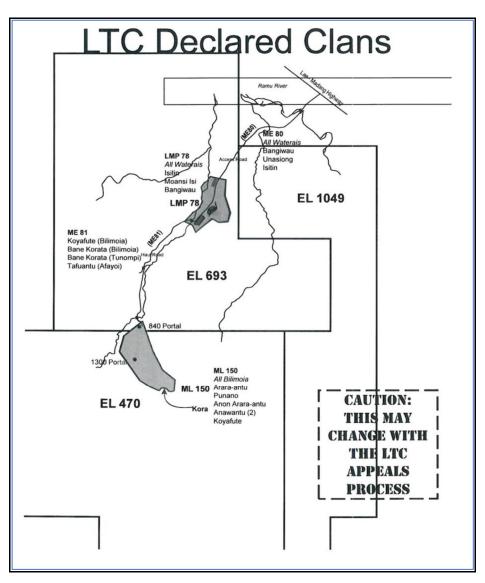


Figure 114. Location of LTC Declared Clans

## 20.10 OTHER SIGNIFICANT FACTORS AND RISKS

Barrick conducted an extensive investigation into the matter of 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.

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 31 December, 2019 was 10.8 million PNG 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.

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 External Affairs and Sustainable Development ("EA&SD") 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 community relations issues since modern exploration commenced, resulting in many prospective areas not being explored and very limited drilling. The K92ML EA&SD 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 K92ML's commitment to deal equitably with local communities, Community Engagement Agreements between K92ML and local landowners are put in place prior to any exploration activities commencing. These set out what the community could expect from K92ML, including incentive payments, rental payments and dispute resolution procedures. The K92ML EA&SD team includes six community relations officers and seven village liaison officers supported by a General 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.

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 13 August 2017. 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 24 August 2017, 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 to 2019 to set-up the MOA which was held in mid-July 2020, with a range of commitments from the state, province, and company to expand the business opportunities and capacity for the Landowner groups.

As to political risk, Nolidan notes that on the Fraser Institute's Investment Attractiveness Index for 2018 Papua New Guinea ranks higher than Indonesia and the Philippines but below Australia. It is almost equal ranking with New Zealand and New Zealand (Fraser Institute Annual Survey of Mining Companies, 2018). Its score was 66.32 compared with 61.92 in 2014. Papua New Guinea was ranked at 41<sup>st</sup> of 83 countries reviewed by the Fraser Institute.

#### 21 CAPITAL AND OPERATING COSTS

### 21.1 KORA MINE

## 21.1.1 Capital Expenditure – Project Facilities and Infrastructure

Total

Preliminary and conceptual capital expenditure estimates were provided by K92ML. This includes an estimate for a new 1 Mtpa process plant. This estimate was provided to K92ML by Mincore in its updated report. Please refer to Table 67 below. Further detail of the Process Plant costs is provided in Section 21.2:

ltem	Cost, \$M	Comment
Camp Upgrade	4.1	K92ML estimate
New 1Mtpa Plant	46.3	Mincore estimate
New Power Station	16.0	Mincore estimate
Offices facilities	0.8	K92ML estimate
Upgrade to site security	1.7	K92ML estimate
TSF Lifts	14.3	K92ML estimate
EOM rehab	6.3	K92ML estimate
Freight	6.9	K92ML estimate
1	1	

Table 67. Kora capital expenditure – Project Infrastructure

Table 68. Kora capital expenditure – Equipment - Site

96.2

Item	Cost, \$M	Comment	
Light Vehicles	0.7	AMDAD allowance	

# 21.1.2 Capital Expenditure – Mine Infrastructure and Equipment

K92ML provided the estimates and allowances in Table 69 and Table 70 below for mining infrastructure and facilities.

Table 69. Kora capital expenditure – Mine Infrastructure - Underground

Item	Cost, \$M	Comment
Pump Stations	0.4	K92ML estimate
Geotechnical review for Raises	0.7	AMDAD allowance
Primary Fans & Installation	3.5	K92ML estimate
Magazine upgrade	0.4	K92ML estimate
Crib Room Fit-out	0.1	K92ML estimate
Communications System	1.9	K92ML estimate
Escapeway Installation	2.1	K92ML estimate
Surface Water Tank	0.1	K92ML estimate
Refuge Chambers (20 person)	0.8	K92ML estimate
Grout Pump & Tensioner	0.1	K92ML estimate
IT Accessories (basket, forks)	0.2	K92ML estimate
Secondary Fans	1.7	K92ML estimate
Pumps	0.2	K92ML estimate
Jumbo Box /Fan Starters	0.2	K92ML estimate
Substations & backbone	3.2	K92ML estimate
Tele-Remote Stations	1.1	K92ML estimate
Service Bay / Wash Bay	0.4	K92ML estimate
Ablutions	0.1	K92ML estimate
Orepass replacement system	9.6	AMDAD allowance
Orepass Truck loading system	1.3	AMDAD allowance
Freight	1.7	K92ML estimate
Tot	al 29.7	

Table 70. Kora capital expenditure – Mine Infrastructure – Surface

ltem	Cost, \$M	Comment
Upgrade of UG facilities	0.5	K92ML estimate
UG Office	0.1	K92ML estimate
UG Workshop - Mobile Fleet	0.1	K92ML estimate
Pastefill Plant	19.8	Mincore estimate
Pastefill Plant elect retic	0.5	Mincore estimate
Dewatering (rising main to WTP)	1.1	K92ML estimate
UG accessories	0.2	K92ML estimate
Tooling (UG & Maintenance)	0.3	K92ML estimate
Tech Services Accessories	0.3	K92ML estimate
Freight	2.3	K92ML estimate
Total	25.4	

The capital estimate for mining equipment, shown in Table 71 below, is based on fleet numbers and costs provided by K92ML. These estimates include allowances for rebuilds. AMDAD considers the numbers to be reasonable for the purpose of the PEA.

Table 71. Kora capital expenditure – UG Equipment

ltem	Cost, \$M	Comment
Heavy Vehicles	44.0	K92ML estimate
Light Vehicles	1.1	K92ML estimate
Total	45.1	

K92ML currently has a fleet of mobile equipment mining the northern end of the Kora deposit. Table 72 below summarises the current and additional mobile fleet required for the LOM schedule.

Table 72. Kora mobile equipment

Table 72. Nota mobile equipment					
Mobile Fleet	Current number	Peak Demand	Note		
Development Jumbo	5	5	Twin-boom jumbo suitable for rockbolting and face boring. Current fleet includes two recent units.		
Long hole drill / Cablebolter	1	2	Single long hole drill suitable for drilling stope holes, dra and cable holes and cablebolt holes. Current fleet include one new hydraulic unit and two small pneumatic Stopeman units.		
LHD Unit, 17t	3	3	All current units 2018 or 2019 models.		
LHD Unit, 12t	2	1	Both units 2017 models.		
Haul Truck	3	6	40 - 45t units		
Shotcrete Jumbo	1	2	Currently have a small Jacon Midjet unit. Larger unit required e.g. Jacon Maxijet		
Agi truck	1	2			
Services vehicle	0	2	e.g. IT and a dedicated charge vehicle		
Grader	1	1	1 10yr old unit on site. A new unit is required.		

Total estimated capital expenditure for mine infrastructure and equipment is: US\$100.1M.

# 21.1.3 Capitalised Mine Development costs

All waste development (lateral and vertical) is treated as a capital cost. These costs are also referred to by K92ML as Sustaining Capital. Table 73 below is a summary of quantities and costs for capitalised development as estimated by AMDAD.

Table 73. Kora capital expenditure - Development

ltem	Cost, US\$M
Lateral Waste Development	156.3
Vertical Waste Development	36.5
Haulage	46.6
Power Supply and Maintenance	29.5
Total Capital Development	269.0

Power cost estimates provided by K92ML for both capitalised mine development and operating costs are based on a power unit cost of \$0.189/kWh.

# 21.1.4 Mine Operating Costs

Total operating cost estimated for the Kora LOM schedule is US\$916.4 million.

This cost is derived from the estimated development and production quantities from the LOM schedule applied to the unit costs provided by or confirmed by K92ML.

The operating costs provided by K92ML are for the 1Mtpa operation. To account for current production rates and the ramp up years, the unit costs are escalated as shown below:

- 110% to year 2021 to 2023. G&A cost increased to match current forecast from K92ML
- 100% to year 2024 onwards
- 110% to year 2030 to 2032 to development, drill & blast and UG haulage to account for mining low grade stopes near existing previously mined stopes.

Table 74. Kora operating unit costs for LOM

Item	Units	Unit Cost
General and Admin	\$ / t ore	27.01
Processing	\$ / t ore	25.20
Mining	\$/t ore	41.41

# Please note:

These costs were updated subsequent to those used to determine the marginal economic cutoff grade
and for evaluating the elevated cutoffs. The updated costs are slightly lower, so the marginal economic
cutoff is conservative. The new costs may also affect the evaluation of the elevated cutoffs however
AMDAD considers the selection of the 5.5g/t cutoff to be reasonable for the purpose of the PEA.

A breakdown of the LOM operating cost into mining and non-mining is provided in Table 75 below.

Table 75. LOM Estimated Operating Costs for the Kora Mine Plan, \$M

Туре	Total	2021	2022	2023	2024	2025
Mining	405.3	18.8	21.6	25.4	38.7	39.8
Non-mining	511.0	31.6	32.0	36.6	43.6	47.7
Total	916.4	50.4	53.7	62.1	82.3	87.5

Туре	2026	2027	2028	2029	2030	2031	2032
Mining	41.7	41.4	37.7	38.3	41.8	38.9	21.2
Non-mining	48.6	48.7	48.1	48.5	48.5	48.5	28.7
Total	90.3	90.1	85.8	86.8	90.2	87.3	49.9

# 21.2 TREATMENT PLANT

# 21.2.1 Capex Summary

The 1Mtpa Process Plant study encompassed preparation of Capital Cost Estimate (Capex) and Operating Cost Estimate (Opex) as detailed below. The Capital cost estimate was prepared in accordance with Class 4, AusIMM Cost Guidelines. Individual Capital Cost Estimates have been prepared for the Processing Plant; Centralised Power Station and 11kV Reticulation, and for Recycling of Tailings as Backfill.

The total estimated installed capital estimate for the 1Mtpa Processing Plant is estimated to be US\$46.26 million and includes a ±30% contingency allowance of US\$10.67 million.

Table 76.Capex estimate for 1Mtpa Processing Plant

Area	DESCRIPTION	Direct Cost (AUD\$)	Direct Cost (US\$)
310	Crushing	\$2,960,581	\$2,072,407
320	Grinding	\$12,037,728	\$8,426,410
330	Flotation	\$4,228,702	\$2,960,091
350	Gold Room	\$1,157,576	\$810,303
360	Concentrate Dewatering	\$5,309,572	\$3,716,700
380	Reagents	\$569,012	\$398,309
381	Lime	\$200,902	\$140,631
390	Services	\$2,415,987	\$1,691,191
470	Piperack	\$498,413	\$348,889
-	Piping (factored 10%-15%) including 10% duty	\$4,496,366	\$3,147,456
-	E&I (factored 10%-20%)	\$5,024,531	\$3,517,172
Sub-Tot	al Direct Cost	\$38,899,370	\$27,229,559
EPCM S	ervices (20%)	\$5,765,300	\$3,459,180
First Fill	(1%)	\$388,994	\$272,296
Estimated Total Cost		\$47,068,238	\$32,947,767
Owners Cost (8%)		\$3,765,459	\$2,635,821
±30% Contingency		\$15,250,109	\$10,675,076
TOTAL I	NSTALLED CAPITAL COST	\$66,083,806	\$46,258,664

The total estimated installed capital cost for the new centralised power station and 11kV reticulation is US\$15.8 million and includes a  $\pm 30\%$  contingency allowance of US\$3.65 million

Table 77. Capex estimate for Centralised Power Station and 11kV Reticulation

Area	DESCRIPTION	Direct Cost (AUD\$)	Direct Cost (US\$)
-	22kV & 11kV Overhead Power Line Upgrade Note 1	(cost by PPL)	(cost by PPL)
	New Main Switchyard	\$1,868,378	\$1,307,864
	New Centralised Power Station (8 off 1640kW Gensets)	\$8,509,530	\$5,956,671
	New 11kV Main Substation	\$2,633,426	\$1,843,398
	Existing Switchyard (upgrade)	\$387,989	\$271,592
	Subtotal Direct Cost	\$13,399,322	\$9,379,525
	EPCM Services (20%)	\$2,679,864	\$1,875,905
	Estimated Total Cost	\$16,079,187	\$11,255,431
	Owners Cost (8%)	\$1,286,335	\$900,434
	±30% Contingency	\$5,209,656	\$3,646,760
	SUBTOTAL INSTALLED CAPITAL COST	\$22,575,178	\$15,802,625
	Expanded fuel pods for 14 days storage - 5 off 100m3 tanks	\$281,964	\$197,375
	TOTAL INSTALLED CAPITAL COST	\$22,857,142	\$16,000,000

 $\underline{\text{Note 1}}. \text{ Overhead Power Line Upgrade cost of AU} \\ \text{$^{1.5}$M (US} \\ \text{$^{4.73}$M) not included above - to be allocated to PPL} \\ \underline{\text{Note 1}}. \\ \underline{\text{Note 1}}. \\ \underline{\text{Note 1}}. \\ \underline{\text{Note 2}}. \\ \underline{\text{Note 2}}. \\ \underline{\text{Note 3}}. \\ \underline{\text{Note 4}}. \\ \underline{\text{Note 3}}. \\ \underline{\text{Note 3}}. \\ \underline{\text{Note 4}}. \\ \underline{\text{Note 3}}. \\ \underline{\text{Note 4}}. \\ \underline{\text{Note 4}}. \\ \underline{\text{Note 3}}. \\ \underline{\text{Note 4}}. \\ \underline{\text{Note 5}}. \\ \underline{\text{Note 6}}. \\ \underline$ 

Note 2. HV & LV power distribution is included in each facility cost (1Mtpa Process Plant and Thickened Tails & Backfill Plant)

## The basis of the Capex Estimate were:

- Class 4 Capital Cost Estimate to an accuracy of ±30% based on AusIMM Cost Guidelines
- Exchange rate of \$AUD 1.0 = \$USD 0.70 has been used
- EPCM cost allowance has been factored as 20% of the total direct cost
- Owner's costs are included at 8% of the total direct cost, for project implementation management and permitting
- First fill cost has been factored as 1% of the total direct cost
- Capital spares have been factored as 3% of mechanical equipment supply cost
- Customs Duties included at 25% of direct cost for Fabricated Steel Items and 10% for Poly Piping

The total estimated installed capital cost for the Tailings Management System including flotation thickener, transfer pipeline and paste plant is US\$19.8 million which includes a ±30% contingency allowance of US\$4.57 million as summarised in Table 78.

**Table 78. Capex estimate for Tailings Management Facility** 

Area	Description	<b>Direct Hours</b>	Total Cost (AUD)	Total Cost (USD)
370	Tailings Handling Area			
371	Tailings Area Process plant	6,328	1,925,043	1,347,530
372	Paste Backfill plant	14,338	7,419,750	5,193,825
373	Transfer pipeline	50,520	5,107,291	3,575,103
374	Paste pipeline	9,000	690,096	483,067
-	E&I (factored 10%)		1,631,817	1,142,272
	Subtotal Direct Cost	80,185	16,773,996	11,741,797
EPCM Services (15%)			3,354,799	2,348,359
First Fills (1%)			16,774	11,742
Estimated Total Cost			20,145,569	14,101,899
Owners Cost (8%)			1,611,646	1,128,152
Contingency (30%)			6,527,165	4,569,015
тота	L INSTALLED CAPITAL COST		28,284,380	19,799,066

# 21.2.2 Process Plant Operating Costs

A summary of the total annual processing cost for 1Mtpa throughput is shown below.

Table 79. Annual Opex processing cost estimate

DESCRIPTION	Annual Cost (AUD\$M)	Annual Cost (US\$M)	Cost Component (%)
Power *	9.743	6.820	28.3
Labour - Plant Production	2.386	1.670	6.9
Labour - Plant Maintenance	1.446	1.012	4.2
Plant Reagents and Consumables	6.998	5.204	20.4
<b>Gold Room Operating Cost</b>	1.137	0.800	3.3
Maintenance Consumables	1.644	1.151	4.8
Lab Operating Cost	2.160	1.512	6.3
Concentrate Transport Cost	7.443	5.210	21.7
Sustaining Capital	1.412	1.000	4.1
TOTAL COST PER ANNUM	34.369	24.376	100.0

Note: \* a power unit cost of AUD\$0.22/kWh (USD\$0.154) (diesel generated) was used.

The operating cost for the 1Mtpa expansion plant has been developed by area and nature of cost. The costs are based on Q1 2020.

The base information was sourced from site, including manning, consumables, plant design criteria, operating practice and industry standard.

The plant operating costs include processing labour and supervision, mill maintenance labour and supervision, power, mill maintenance and process plant consumables and gold room and lab operation. Concentrate transport cost and Sustaining Capital based on 3% capital cost has been included as well.

<u>Note</u>: Tails thickening, filtration and paste plant\*, site general & administration, camp, and support infrastructure such as vehicle workshops have been excluded.

# 21.2.3 Paste Fill Plant Operating Cost

A summary of the total operational estimate for the 1Mtpa processing plant to recycle the tailings as paste backfill is shown in the table below.

The operating cost of the tailings and paste backfill plant is treated as a mining cost in the financial model.

Annual Cost | Cost Component DESCRIPTION (USD\$) (%) Power - Process Plant \$506,000 7.4 Power - Paste Plant \$568,000 8.4 Labour - Plant Production/Maintenance \$55,500 0.8 Plant Reagents - Flocculant \$32,300 0.4 Paste Plant Consumables - Binder \$5,115,000 75.2 Maintenance Consumables \$530,000 7.8 TOTAL \$6,806,800 100 Total USD/t processed ore \$6.8

Table 80. Annual Opex estimate for Recycling of tailings as backfill

The most significant estimated operational cost is the cement that is used as a binder to bond or draw other materials together to form a cohesive cost-effective structure.

Note: \* a power unit cost of AUD\$0.22/kWh (USD\$0.154/kWh) (diesel generated) was used.

## 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 pre-tax cashflow and pre-tax DCF derived from these quantities, with allowances for capital expenditure. After-tax cash flow and after-tax DCF are provided using information and tax computations provided by the issuer.

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.

- Economic and processing parameters assumed and referred to in the study are preliminary and some 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 preliminary extraction designs.
- Mineral resources that are not mineral reserves do not have demonstrated economic viability.
- The schedules from which cashflows are derived are based on preliminary development and stoping quantities estimated at a relatively 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 are guided by current operating costs for the K92ML concentrator and estimates from consultants.
- Metal Prices were nominated by K92ML: Gold US\$1,500/oz; Copper US\$3.00/lb, Silver US\$18.0/oz
- The following processing recoveries were nominated by K92ML:
  - Gold recovery is 95%,
  - o Copper recovery is 95% and
  - Silver recovery is 77%
- The refining charges and metal payable rates are based on the current confidential offtake agreement between K92ML and Trafigura.
- Discounting for Pre and After Tax DCFs is notionally applied at mid-years, i.e. n = 0.5, 1.5, 2.5 etc.
- The issuer's tax computations assume a corporate tax rate of 30% (current Papua New Guinean corporate tax rate) and depreciation of 10% to 25% straight line.
- The estimates of tonnes and grade reported and scheduled do not constitute a Mineral Reserve because of the following:
  - The Mineral Resource estimate from which the tonnes and grade are derived is predominantly Inferred Resource. Inferred Resources are at too low a level of confidence to allow conversion to Mineral Reserves,
  - There are still insufficient data to be confident in geotechnical design parameters for development and extraction, and costs and the mine plan can only be considered preliminary, and
  - 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, 2019 and 2020 to-date has been from the Kora deposit and K92ML considers that the actual recoveries support the assumptions made.
  - Any reference to "ore" in the PEA 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.

# Key estimates from the Kora mine plan are:

- Over a 12-year operating life the plant would treat 9.8 Million tonnes averaging 8.8 g/t Au, 18 g/t Ag and 1.0% Cu (10.4 g/t Au Eq).
- Production is estimated at 2.64M oz gold, 88t copper and 4.25M oz silver (3.10M oz AuEq) over the LOM.
- The upfront capital is estimated \$US124.6 million and LOM sustaining capital of \$US341.3 million.
- Operating Cost is estimated to be US\$94/tonne of ore for the LOM.
- The overall LOM production cost inclusive of capital and sustaining capital, is estimated at US\$523/oz gold and US\$447/oz gold equivalent.
- The estimated production and costs would generate a positive cash flow of US\$2,856 million using metal prices as stated above. This cashflow includes the preliminary and conceptual allowances for capital.
- The estimated pre-tax DCF is US\$2,061 million; using metal prices as stated above and a 5% discount rate.

Estimated annual pre and after-tax cashflows are presented below for the LOM plan. These pre-tax cashflow for 2021 onwards are always positive, indicating that the new 1Mtpa mill and mine capital will be self-funding.

Table 81. Kora simplistic pretax cashflow and after-tax cashflow using information and tax computations provided by the issuer model for LOM Plan, \$M

Cashflor	w Item	Total	2021	2022	2023	2024	2025
Capital		124.6	18.1	39.0	53.7	10.7	3.1
Sustaining Cap	ital	341.3	44.0	43.0	42.1	31.5	33.8
Opex – mining		405.3	18.8	21.6	25.4	38.7	39.8
Opex – non mi	ning	511.0	31.6	32.0	36.6	43.6	47.7
Total Opex,	\$M	1,382.4	112.4	135.6	157.9	124.5	124.5
Capex & Sust	\$/oz Au	523.2	848.5	1,028.6	1,057.8	633.3	435.2
Capex	\$/oz AuEq	446.5	783.2	946.1	928.2	531.2	376.4
Total Revenue		4,238.6	198.4	198.0	233.4	320.3	453.7
Net Cashflow		2,856.2	85.9	62.4	75.5	195.8	329.2
Taxes		697.5	12.3	1.9	1.8	38.8	80.1
Net after-tax Cashflow		2,158.7	73.6	60.5	73.8	157.0	249.1
AuEq koz. prod	duced	3,096	144	143	170	234	331

Cashflov	w Item	2026	2027	2028	2029	2030	2031
Capital		0.0	0.0	0.0	0.0	0.0	0.0
Sustaining Cap	ital	37.7	27.4	24.8	24.3	14.1	10.2
Opex – mining		41.7	41.4	37.7	38.3	41.8	38.9
Opex – non mi	ning	48.6	48.7	48.1	48.5	48.5	48.5
Total Opex,	\$M	128.0	117.5	110.6	111.1	104.4	97.5
Capex & Sust	\$/oz	458.1	376.6	395.1	423.8	371.4	369.0
Capex	\$/oz AuEq	398.3	333.2	329.3	348.4	309.7	309.1
Total Revenue		440.8	484.7	458.5	434.5	460.4	431.5
Net Cashflow		312.8	367.2	347.9	323.4	356.0	334.0
Taxes		79.7	97.8	93.3	86.7	98.1	92.9
Net after-tax Cashflow		233.1	269.3	254.6	236.5	257.9	241.1
AuEq koz. prod	duced	321	353	336	319	337	315

Cashflow Item		2032	2033	2034	2035
Capital		0.0	0.0	0.0	0.0
Sustaining Cap	oital	6.1	0.8	0.7	0.7
Opex – mining	3	21.2	0.0	0.0	0.0
Opex – non m	ining	28.7	0.0	0.0	0.0
Total Opex,	\$M	56.0	8.0	0.7	0.7
Capex &	\$/oz	834.3	-	-	-
Sust Capex	\$/oz AuEq	606.4	-	-	-
Total Revenue	9	124.4	0.0	0.0	0.0
Net Cashflow		68.4	-0.8	-0.7	-0.7
Taxes		14.6	-0.2	-0.2	-0.2
Net after-tax Cashflow		53.8	-0.6	-0.5	-0.5
AuEq koz. pro	duced	92	0.0	0.0	0.0

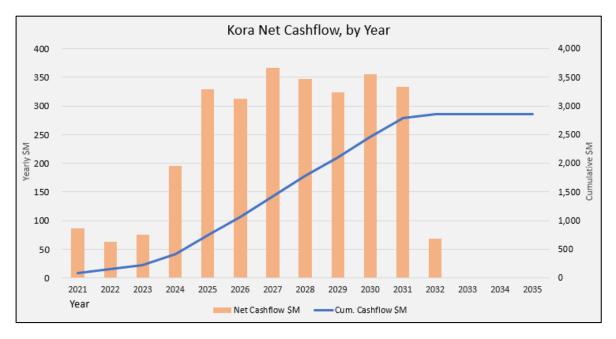


Figure 115. Kora net yearly and cumulative pre-tax cashflow

Table 82 shows the sensitivity of pre -tax DCF and after-tax DCF using information and tax computations provided by the issuer to gold price.

Table 82. Pre and after-tax DCF for various gold prices, US\$M

Gold Price \$US/oz	Pre-Tax DCF <sub>5%</sub> , \$M	After-Tax DCF <sub>5%</sub> , \$M
1400	1,875	1,439
1500	2,061	1,569
1600	2,247	1,700
1700	2,433	1,830
1800	2,619	1,960

# **23 ADJACENT PROPERTIES**

Kainantu occurs within a well-endowed belt of epithermal and porphyry style mineralization that reportedly contains several major deposits (Figure 116). 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.

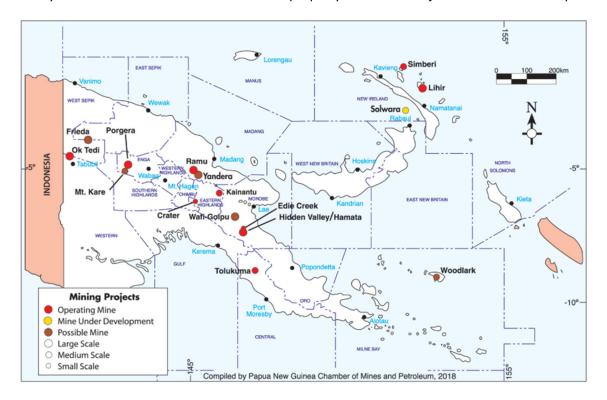


Figure 116. Location of Kainantu project and gold deposits within major mineralized province.

Source: PNG Chamber Mines and Petroleum 2018

K92ML does not have any interest in any adjacent properties.

# 24 OTHER RELEVANT DATA AND INFORMATION

The overall project schedule from project go-ahead until the first gold pour and project handover is scheduled for 22 months. A detailed Project Schedule has been prepared.

# Table 83. Project Schedule

Task	Month						
	3	6	9	12	15	18	21
Concept Engineering &							
Client Approval (8wks) + (4wks) float							
Early Engineering for Long							
Lead Items (10wks)							
Detail Design &							
Procurement (34wks)							
Procurement &							
Installation Crushing Area							
(36wks)							
Procurement &							
Installation Grinding Area							
(52wks)							
Procurement &							
Installation Gold Room							
(44wks)							
Procurement &							
Installation Flotation Area							
(44wks)							
Procurement &							
Installation							
Concentrate Dewatering (57wks)							
Procurement & Installation Tailings &							
Backfill Plant (44wks)							
, , ,							
Procurement & Installation							
Reagents & Services							
(31wks)							
Control System							
Installation							
(4wks)							
Commissioning Dry + Wet							
(4wks) + (4wks)							

#### 25 INTERPRETATION AND CONCLUSIONS

## 25.1 EXPLORATION POTENTIAL

The Kainantu project is 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.

Significant opportunities remain for resource extension within the immediate mine environment for both Kora Consolidated and Irumafimpa. The Kora Consolidated lodes are strongly mineralized at the limit of current drilling and are open at depth and to the south.

There remains a significant number of major untested and early stage targets. Within ML150 other mineralisation such as the Judd, Kerempa and other unnamed mineralized lodes that lie parallel to the already defined Kora Consolidated resource estimates have economically attractive grades in surface and/or drill samples from the limited work completed to date. .

Figure 117 is a diagrammatic representation of exploration projects within K92s tenements at Kainantu as ranked by K92ML exploration personnel in early 2020.

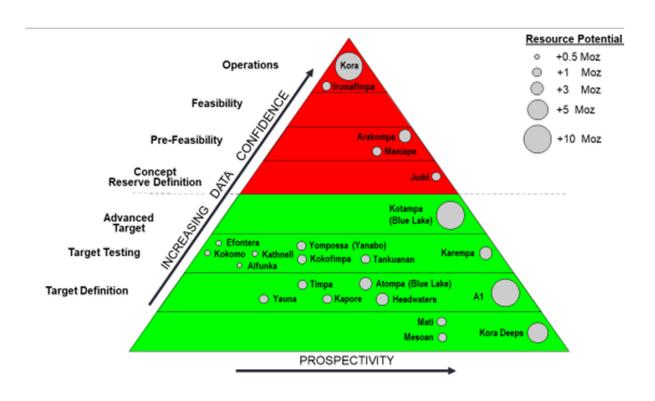


Figure 117. Kainantu exploration project ranking

(Source: K92ML, 2020)

# 25.2 QAQC PROGRAMMES

The quality of the QAQC programme has improved significantly since the 2018 resource estimates However further improvements can be made to include better documentation of protocols, particularly with the insertion rates, and more informative graphs showing the whole K92ML datasets and the behaviour of the QAQC samples over a longer period of time.

It is also important to try and acquire QAQC data for the historical drilling at Kora and Eutompi. A review of all QAQC outcomes comprises part of the subjective assessment for the classification of resource estimates. A lack of QAQC data or poorly executed programmes can have a significantly negative impact on the resource classification e.g. it can prevent the classification of MRE as Measured.

## 25.3 MINERAL RESOURCE ESTIMATE

The additional diamond drilling and face sampling completed since September 2018 has allowed for an expansion of the Mineral Resources for Kora North. This expansion has resulted in the inclusion of the Kora and Eutompi areas into the K1 and K2 mineral wireframes, now known as Kora Consolidated, roughly a nine-fold increase in the size of the two lodes as per the 2018 interpretation.

The drilling has also improved the confidence of the geological interpretation for the K1 and K2 lodes and has allowed for a re-interpretation of the Kora Link, which now comprises five narrow lodes (KL1 to KL5) slightly oblique/parallel to the K1 and K2 lodes, perhaps in an en echelon array. At this stage only KL1 to KL3 are considered big enough to warrant the assignment of resource estimates.

Data analysis for gold, copper and silver indicated that the practice of combining the face sampling with the drilling results was still reasonable. This analysis indicated that a 1000g/t top cut for gold was needed for extreme values in the K2 lode data and a 150g/t cut off was needed for the KL2 lode. No top cuts were required for the copper and silver. Variography was generally weak for all elements, mainly due to the narrowness of the lodes, the wide drillhole spacing and subtle undulations in the dip and strike of the lodes.

The same grade interpolation strategy as used for the 2018 work was implemented. Grade interpolation of the 1m composite data (minimum length 0.5m) was completed using Ordinary Kriging with a block size of 1m by 5m by 5m. The grade interpolation utilised 3 three-pass search strategies with search passes 1 to 6 representing the resource estimates (passes 7 & 8 represent a measure of exploration potential, Pass 9 was discarded). Minimum search radii were 2m by 25m by 25m with a minimum number of 12 data and 4 octants increasing to a maximum of 10m by 125m by 125m with a minimum number of 6 data and 2 octants. Search ellipse orientations generally reflected the subtle changes in dip and strike of the vein systems, with up to 8 search domains used for each of the K1 and K2 lodes.

Default average density values have been applied to the different lodes from information supplied by K92ML. The defaults are based on limited core measurements using the Archimedes Method (weight in air/weight in water). Density (t/m³) is on a per zone basis, with K1 and Kora Link: 2.84 t/m³; K2: 2.93 t/m³; waste: 2.8 t/m³. There is an insufficient amount of density data for grade interpolation. More measurement data is required.

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.

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.

Gold reconciliation of the resource model with the mill production up to the effective date has been reasonably good, especially in terms of recovered ounces from the mill being 12% above that estimated by the model.

### 25.4 SCOPING STUDY

The preliminary economic assessment for Kora is preliminary in nature. It is based on a mine plan which 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, further geotechnical assessment is required to confirm the feasibility of stope designs. Mineral resources that are not mineral reserves

do not have demonstrated economic viability. There is no certainty that the preliminary economic assessment will be realized.

Key points and estimates from the Kora Mining Study prepared by AMDAD are:

- Resource drilling has linked mineralization that was previously two separate areas, Kora and Kora North, into
  a single continuous zone. The April 2020 Mineral Resource Estimate and the updated PEA mine plan now
  refer to the combined deposit simply as Kora.
- The mine plan has been updated with the latest resource to target a 1Mtpa production rate. It is based primarily on longhole stoping with an optimised cutoff grade of 5.5g/t gold equivalent.
- Some "incremental" stope material is also included at the end of the mine life. This is material that is below the optimal cut-off grade of 5.5 g/t gold equivalent but above the marginal economic cut-off grade of 3.04 g/t gold equivalent.
- The mine plan and PEA estimates are for mining operations from 1 January 2021 onwards, modelling the project expansion from 400ktpa to 1Mtpa. The production estimates exclude those parts of the Mineral Resources that were, or are planned to be, extracted between 1 April 2020 and 31 December 2020.
- The updated Kora mine design includes 118,485m of lateral development and 6,951m of vertical development.
- Planned treatment totals 9.8Mt tonnes at 8.8 g/t gold, 1.0%copper, 18 g/t silver, (10.4g/t gold equivalent) over the 12-year LOM plan. This comprises 2,240kt from development and 7,549kt from stoping.
- This production would generate an estimated positive pre-tax cash flow of US\$2,856 million using the following metal prices: gold US\$1500/oz, copper US\$3.0/lb, silver US\$18/oz. This pre-tax cashflow includes allowances for capital.
- Production is estimated at 2.64M oz gold, 88t copper and 4.25M oz silver (3.10M oz gold equivalent) over the life of mine (LOM). The LOM production cost, including capex and sustaining capex, is estimated at US\$523/oz gold and US\$447/oz gold equivalent.
- The PEA production estimates would generate a simple pre-tax discounted cashflow of US\$2,061 million; using the PEA metal prices stated above, and a 5% discount rate.
- The LOM Capital Cost breakdown is summarised in Table 84.

**Table 84. Capital Cost Breakdown** 

Capital Type	US\$M
Up-front Capital	125
Sustaining Capital	341
Total	466

- Operating Cost is estimated to be US\$94/tonne of ore for the LOM.
- The estimated pre-tax cashflow for 2021 onwards is always positive indicating that the new 1Mtpa mill and mine capital will be self-funding.
- Table 85 shows sensitivity of pre and after-tax DCF<sub>5%</sub> to gold price.

Table 85. Pre and After-tax DCF<sub>5%</sub> sensitivity to gold price

Gold Price, US\$/oz	Pre-Tax DCF <sub>5%</sub> , US\$M	After-Tax DCF <sub>5%</sub> , \$M
1,400	1,875	1,439
1,500	2,061	1,569
1,600	2,247	1,700
1,700	2,433	1,830
1,800	2,619	1,960

## 25.5 NEW 1 MTPA TREATMENT PLANT

Design criteria, process flow sheets and a mass balance for a 1Mtpa Process Plant treating material from a copper-gold sulphide deposit have been developed. The design and equipment selection is based on current site experience with operational improvements. Capital Cost Estimates (Capex) and Operating Cost Estimates (Opex) were prepared for the Processing Plant; Secondary Back-up Power station; Camp Expansion Back-up power generation and reticulation and for Recycling of Tailings as Backfill.

The total installed capital estimate for the 1M tpa Processing Plant is estimated to be USD\$46.3mil including a 30% contingency allowance. A new standalone Power Station for the 1M tpa Processing Plant is estimated to cost USD\$16mil inclusive of a 30% contingency.

Conventional single stage crushing followed by a SAG milling circuit was chosen in place of the current multi stage crushing and ball mill circuit based on the nature of the ore and the expectation that the clay content in plant feed will increase. The milling circuit includes flash flotation and a gravity circuit to capture free gold for smelting on site to produce gold dore.

Conventional sulphide flotation, thickening, filtering and concentrate drying is employed to produce a high grade concentrate which is loaded into shipping containers for transport to smelters.

The overall project schedule from project go-ahead until the first gold pour and project handover is scheduled for 22 months. A detailed Project schedule has been prepared.

# 25.6 RISK ASSESSMENT

## 25.6.1 Kora Mine Plan

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.

There is a considerable level of risk and uncertainty to achievement of the Kora Mine Plan presented above, including estimated tonnes and grade and production rate. Key risks, uncertainties and required further work are summarised in Table 86 below. The work to address these risks and uncertainties includes studies to be undertaken as part of a Feasibility Study program to commence in the second half of 2020 and to be completed in 2021.

Table 86. Key uncertainties and risks, and further work requirements

Table 86. Key uncertainties and risks, and further work requirements					
Area of Uncertainty and Risk	Discussion and Recommended Further Work				
Mineral Resource	<ul> <li>81% of the Kora Mineral Resource is classified as Inferred Mineral Resource. Inferred Mineral Resources are considered too uncertain with regard to geological and grade continuity to have the economic and other 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 that are dependent on the resource tonnes and grade will be realized.</li> <li>As well as continuing diamond drilling to further expand the Kora Mineral Resource, K92ML will also continue drilling of the Kora deposit to upgrade the Inferred Mineral Resources there to Indicated and Measured Mineral Resources. The Measured and Indicated Mineral Resources will underpin the Feasibility Study mine plan and the estimation of Proven and Probable Mineral Reserves respectively.</li> </ul>				
Geotechnical Conditions	<ul> <li>Geotechnical conditions are a key area of uncertainty and risk for the mine plan. In particular:</li> <li>Mining across and along the clay gouge in the K1 hangingwall is potentially hazardous and represents a challenge.</li> <li>A conservative approach of standing well off the clay gouge will result in poor recovery of the K1 and KL veins. However, carrying the gouge in development and stoping may result in unacceptable dilution and/or instability.</li> <li>Techniques will need to be established that will allow safe development of and production from long hole stopes in K1 and KL.</li> <li>These assessments are likely to involve trialling of alternative stoping methods over the next year in parallel with the Feasibility Study.</li> <li>Following on from the recent preliminary geotechnical assessment, the following specific geotechnical investigations will be a key part of the Feasibility Study:</li> <li>Geotechnical Data Collection         <ul> <li>full geotechnical logging of historical and current drill holes</li> <li>define rock mass joint sets and regional structural information</li> <li>structural data on the location and thickness of the clay gouge structure</li> <li>Geotechnical Data Review, Compilation and Update of Geotechnical Model</li> <li>The updated rock mass characterisation, geological structure wireframes, rock mass structural data and point load test results will be used to update and refine the geotechnical rock mass model. Emphasis will be placed on the clay gouge zone and link structures that are expected to influence the stability of development drives and stopes.</li> <li>The updated model will provide the basis for determining development ground support requirements and stable stope spans.</li> <li>Geotechnical Assessment</li> <li>K1 mining method selection</li> <li>Development location</li></ul></li></ul>				

Area of Uncertainty and Risk	Discussion and Recommended Further Work
	Other areas of geotechnical uncertainty requiring further work prior to excavation include:
	<ul> <li>Investigation of vent rise paths, to confirm the suitability and costs to develop these key elements of the proposed ventilation network, and</li> <li>Investigation of ore passes to Haulage-way.</li> </ul>
	investigation of one passes to madiage-way.
	There is a significant degree of uncertainty regarding the mine hydrogeology and potential water inflows. Work is ongoing to collect data, predict and address groundwater inflows and impacts, including: -
	Identification of water bearing structures
Hydrogeological and Water	<ul> <li>Mapping and sampling of groundwater ingress areas in line with guidelines provided by ATC Williams (2020).</li> </ul>
Management	Detailed groundwater study by hydrogeological specialist in conjunction with the Feasibility     Study to
	develop a hydrogeological model and detailed water balance for the mine
	determine expected inflows as the underground workings are developed
	<ul> <li>recommend 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>
Ventilation and	The ventilation layout presented in this PEA is conceptual and has been prepared to indicate possible locations and connections for primary intake and exhaust airways. It has considerable uncertainty in relation to the feasibility of the layout as well as suitability of airway profiles and required airflows and pressures. A comprehensive ventilation study is proposed as part of the Feasibility Study to address the following:
Emergency Egress	Analysis of ventilation options, including VentSim modelling of proposed airways to determine airflows, pressures, air power and fan specifications.
	Investigate the feasibility of raiseboring vent raises from surface greater than 500m in length,
	considering the geotechnical requirements, timing, and costs involved.
	Design for emergency egress and refuge systems
	Further work is required in the following areas of materials handling:  Detailed design of the dedicated truck haulage-way system for ore including: -
Materials	<ul> <li>Truck-loading arrangements, including ore pass layouts, stockpiles and chutes, and</li> </ul>
Handling	<ul> <li>Assessment of number and size of trucks required to meet the production targets.</li> </ul>
	Mullock handling and stowage, in conjunction with backfill study, and
	Ancillary materials including aggregate for road sheeting and blasthole stemming
Mining Fleet	Additional mining equipment is required to achieve the scheduled mining activity. A careful assessment is required to confirm equipment specifications, productivities and numbers and in particular the truck haulage fleet.
	Stope and development designs will need to be revised as appropriate based on results from geotechnical investigations and analysis, haulage-way and truck-loading assessment, and ventilation assessment.
Mine Design	Access design will be revised where required to address scheduling and sequencing issues as well as geotechnical and ventilation assessments.
	Backfill is essential for achieving good mining recovery of the high value resource. The current practice of filling stopes with development mullock will not be sustainable in a steady state operation, as the backfill volume required will exceed the volume of development waste produced. A formal backfill study is planned as part of the Feasibility Study to confirm the proposed pastefilling approach, including:
Backfill	Tailings and paste testwork to assess suitability and characteristics of tailings as paste fill, cement addition required to achieve fill strengths
	<ul> <li>Paste plant design and capital cost estimate</li> <li>Paste delivery system design, capital and operating costs</li> </ul>
	In the short to medium term, interim backfilling investigations are required to determine appropriate methods for placing uncemented rock fill in longhole stopes using the Avoca

Area of Uncertainty and Risk	Discussion and Recommended Further Work
	method, as well as the option for placement of cemented rock fill in K1 longhole stopes as it transitions away from cut and fill.
Production Rate and Schedule	There is a considerable uncertainty regarding productivity of stoping and stope development, particularly for K1 orebody. Productivities and production rates will be affected by geotechnical conditions and the time required for measures and techniques to address the clay gouge. They will also depend on the method for stoping and backfilling. Potential for failures associated with poor ground will require that additional stopes are made available and ready to ensure that a sufficient number of stopes can always be in production. It will be important to keep development and filling well ahead of immediate requirements where possible, and not to adopt a "just in time" approach. These aspects will require detailed investigation in the Feasibility Study.
Mining Costs	Mine capital and operating costs have a significant degree of uncertainty and require detailed investigation in the Feasibility Study. Costs for the existing 200ktpa mining operations, on which the PEA estimates are based, are considered to be reliable, however the scale up of costs to 1Mtpa has considerable uncertainty.

# 25.6.2 1Mtpa Treatment Plant

Key risks, uncertainties and required further work are summarised below:

- Delays due to long lead times on equipment including SAG Mill, Concentrate Filter Press, etc..
- There is a risk that the material properties will differ from that used in the design, resulting in the incorrect choice and sizing of process equipment for the 1Mtpa plant. This risk is considered low as the same ore bodies will continue to be mined as are currently mined although the proportion from each source and the mining method will change. Consideration has been given in the process design to allow for these changes in the ore which have been identified. A testwork plan has been developed and advised by Mincore to assist in the management of this risk.
- Filter testwork and the subsequent selection of the type of filter equipment may allow the production of a filter cake which does not require further drying. This would eliminate one unit operation with associated production risk(s) and the associated capital and operating cost.
- Reagent screening of fluorine depressants may identify a more effective depressant resulting in the reduction or elimination of smelter penalties.
- Examination of the plant operating pH may identify that a lower pH is optimal resulting in reduced lime
  consumption and more pyrite to concentrate (subject to smelter requirements). Increased pyrite to
  concentrate may result in higher gold recovery as less gold is lost in pyrite to tailings. Microscopy
  investigations undertaken by Core with testwork tailings identified the presence of microscopic inclusions
  of gold and gold telluride in pyrite.
- Plant operating experience currently being gained from operating the new gravity circuit may identify that the installation of a gravity circuit to recover free gold is not warranted. This will eliminate the need for a gravity circuit and associated gold room, saving in capital and operating cost as well as reducing the risk of product theft. In event of deletion the design can leave provision for a gravity circuit if coarse gold is encountered in any future orebody and the gold room within the existing plant is then utilised to process a smaller component of coarse free gold.
- A review of the need for direct truck tipping could result in reduced capital for the crusher feeder installation and remove trucks from the immediate area of the crusher, thereby reducing congestion and improve vehicle safety on the ROM pad.

- A review of the plant layout, especially the flotation area, may identify process streams that can flow by gravity and do not need pumping, resulting in capital and operating savings.
- The risk of supply interruptions to diesel has been addressed by increased storage capacity on site. There
  is an opportunity that if additional hydro generating capacity is installed in the region this could result in
  a lower national power price and hence reduced operating cost.

# 25.6.3 Paste Fill Plant

- Further investigations during the Feasibility Study will review the variation in settled density during the
  operation of the TSF to align the wall raise schedule with the production plan and mine stope backfill
  schedule. This may impact the timing of wall raises.
- Detailed design of the paste plant at the 800 portal will consider the limited space, terrain and local communities living in the area.
- Additional operational risks that will be assessed will include management of pipe failure, location of
  collection areas for tailings in case of pipe failure and leak detection systems.
- Further investigations will incorporate methods to neutralise potential acid rock drainage from paste fill as required.

## **26 RECOMMENDATIONS**

## **26.1 EXPLORATION**

A substantial amount of drilling will be required to upgrade the Mineral Resources. Current Inferred Resources are generally based on 100m spaced drilling; something like 50m spaced drilling would, in normal expectations, be required for Indicated Resources.

There are still areas within the current overall resource outline that require drilling to locate additional resource; this is true for areas of slight discontinuity of the lode(s) strike or dip and where the lode(s) becomes significantly narrow.

The deposit is open to the south and at depth, which with more drilling may expand the resource.

A database audit might be considered in particular the identification of the different lodes in the assay table. The database needs updating with drillhole recovery data for the Barrick and Highlands drilling.

Increase the amount of density data for the general mineral zone (K1 footwall to K2 hangingwall and slightly beyond); an increased amount of data in appropriate areas may allow for grade interpolation of the density data rather than using defaults. Density data is also needed from the historic Kora and Eutompi drilling. It is also recommended that some check density measurements are completed using a different measuring method eg water displacement.

Presentation of the K92ML QAQC results can be improved with better graphic representations to include all drilling and not just the most recent campaign.

Details of the Highlands and Barrick drilling, including any QAQC work, should be compiled into a single report that can be assimilated into any proposed PFS or BFS report.

Drilling should also attempt to find extensions to veins within or close to ML 150. For example the undrilled Kora South prospect has numerous artisanal workings and mineralized outcrops with drill testing is proposed for 2020.

The two-year work program for EL470 includes a proposed minimum expenditure of PGK 1,200,000 (Year 1 PGK 600,000; Year 2 PGK 600,000) for the period ending February 4, 2021. Additional drilling to delineate the lateral extent of the propylitic mineralized shell more closely at Blue Lake (Kotampa) prospect is planned in 2020 followed by deeper targeted drilling to locate a deeper potassic core.

The two-year work program for EL693 includes a proposed minimum expenditure of PGK 1,000,000 (Year 1 PGK 500,000; Year 2 PGK 500,000) for the period ending February 4, 2021. Work will focus on further evaluation of the Maniape and Arakompa prospects which both have historical resource estimates.

A proposed expenditure of PGK 800,000 (Year 1 PGK 400,000; Year 2 PGK 400,000) has been submitted for EL1341 (for the 2-year period ending June 20, 2020) with priority targets at Yompossa (Yanabo) and Yauna.

#### **26.2 MINE**

The following investigations are recommended to increase confidence in the mine plan and in the technical feasibility and economic viability of the project. It is proposed that this work will be completed in conjunction with a Mining Feasibility Study that would be underpinned by the next phase of resource upgrade work.

- Geotechnical Feasibility Study including:
  - Geotechnical Data Collection, Data Review and Compilation
  - Update geotechnical model
  - o Geotechnical Analysis, to confirm:
    - K1 Mining Method
    - Development location, standoff distances, profile sizes
    - Vent raise assessment
    - Mining sequence
    - Stope dimensions
    - Backfill Requirements
    - Dilution estimates
    - Ground support requirements
- Trial Stoping, in conjunction with the Geotechnical Feasibility Study
- Hydrogeological investigations by hydrogeological specialists to improve confidence in estimates of water inflows, and to underpin the mine water management plan.
- A comprehensive ventilation study 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 to consider the implications, timing and costs involved.
- Paste Fill Feasibility Study including:
  - Tailings and paste testwork to confirm the feasibility and viability of paste fill, including cement (or similar) addition to achieve required fill strengths,
  - o Paste plant design and capital and operating cost estimates, and
  - o Paste delivery system design, including operating and capital costs
- A Mining Fleet, Materials Handling and Cost Study including:
  - Assessment of equipment required for development and production, covering specifications, capability, productivity, operating cost, training, maintenance.
  - Detailed design of the dedicated truck haulage-way system for ore including:
    - Truck-loading arrangements, ore pass layouts, stockpiles and chutes, and
    - Assessment of number and size of trucks required to meet the expansion production targets.
  - Mullock handling and stowage, in conjunction with backfill study, including a materials massbalance analysis,

- Ancillary materials including aggregate for incline and road sheeting and production blasthole stemming, and
- Associated mining cost estimates

## **26.3 TREATMENT PLANT**

- Testwork as described in section 13.5 is required to validate design assumptions, give greater confidence in the selection of equipment and identify operational enhancements.
- A review of the need for direct truck tipping could result in reduced capital for the crusher feeder installation and remove trucks from the immediate area of the crusher, thereby reducing congestion and improve vehicle safety on the ROM pad.
- A review of the plant layout, especially the flotation area, may identify process streams that can flow by gravity and do not need pumping, resulting in capital and operating savings.
- Further investigations in settled density during the operation of the TSF to align the wall raise schedule with the production plan and mine stope backfill schedule. This may impact the timing of wall raises.

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: 02 April 2020

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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 for expansion of the Kainantu Mine to treat 1 Mtpa from the Kora Gold deposit, Kainantu project, Papua New Guinea", effective date 2<sup>nd</sup> April 2020, 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, 15, 18 to 20, and 23 to 27 of the technical report.

I have visited the Kainantu Project on the 12th and 13th of November 2014, the 21st to 25th November, 2016 and 15th to 17th January 2020 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 involvement with the Property prior to 2014. 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.

Signed at Brisbane this 27th July 2020.

Anthony James Woodward, BSc Hons, M.Sc., MAIG

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# 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 for expansion of the Kainantu Mine to treat 1 Mtpa from the Kora Gold deposit, Kainantu project, Papua New Guinea", prepared for K92, effective date 2<sup>nd</sup> April 2020, do herby 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 30 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), Nbanga (Burkino 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)
- Completion of a geological interpretation and resource estimates for the Kora North vein system in 2018

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: 27th July 2020.

## **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 For Expansion Of The Kainantu Mine To Treat 1 Mtpa From the Kora Gold Deposit, Kainantu Project, Papua New Guinea, dated 27 July 2020. (the "Technical Report"). The Mineral Resource Estimate has an effective date of 2 April 2020. The Preliminary Economic Assessment has a start date of 1 Jan 2021, excluding the part of the Mineral Resource mined from 2 April 2020 to 31 December 2020.
  - 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 37 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. I last visited the Kainantu mine site and Kora Underground Mine during February 2020 for two 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 K92, 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 K92 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. 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 27th day of July, 2020 at Brisbane, Queensland, Australia.

"Christopher Desoe"	
Christopher Gabor Desoe, BE (Min)(Hons), FAusIMM, RPEQ,	
Manager – Mining, Australian Mine Design & Development Ptv Ltd	

# **CERTIFICATE OF QUALIFIED PERSON**

#### LISA JANE PARK

I hereby state:

My name is Lisa Jane Park and I am the principal of the firm Process Engineering Options of 7/110 Commercial Rd, Teneriffe Queensland 4005, Australia.

I am a practising process engineer registered as a Fellow with the Australasian Institute of Mining and Metallurgy. My membership number is 112751.

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.

I have practised my profession for 26 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.

I am a "qualified person" as that term is defined in National Instrument NI 43-101 (Standards of Disclosure for Mining Studies) (the "Instrument").

I visited the K92 Mining Inc. project area 28-31 January 2020.

I assisted with the K92 Mining Inc. scrubber project, for Mincore Pty Ltd in 2016.

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.

I have reviewed the 1 Mtpa expansion study by Mincore dated 25 July 2020.

For the purposes of the Technical Report entitled "Independent Technical Report, Mineral Resource Estimate update and preliminary economic assessment for expansion of the Kainantu Mine to treat 1 Mpta from the Kora Gold deposit, Kainantu project, Papua New Guinea" (the "Report"), prepared by Nolidan Mineral Consultants, Australian Mine Design and Development, and Mincore, effective date 2 April 2020, I am a part author and responsible person.

Specifically, I am responsible either wholly or partly for the preparation of sections 13, 17, 18, 24 and 26.

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.

I am Independent of the K92 Mining Ltd project pursuant to Section 1.5 of the Instrument.

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.

I do not have nor do I expect to receive a direct or indirect interest in the K92 Mining Inc. project, and I do not beneficially own, directly or indirectly, securities of K92 Mining Inc.

Signed at Brisbane, Queensland, on 27 July 2020.



Lisa J Park BEng (Chem) MAppFin GAICD FAusIMM

Principal - Process Engineering Options

**APPENDIX 1: COLLAR LOCATIONS OF SIGNIFICANT DRILL INTERSECTIONS** 

date	hole_id	max_depth	x	У	Z	prospect_name
15-07-19	EKDD0001	525.2	30075	58951.7	1872.4	Kora
21-07-19	EKDD0002	382.4	29992	59205	1779.5	Kora
19-08-19	EKDD0003	405.1	30075.5	58950.8	1872.3	Kora
01-12-19	EKDD0003A	605.9	30075.5	58950.8	1872.3	Kora
01-12-19	EKDD0003B	284.9	30075.5	58950.8	1872.3	Kora
24-08-19	EKDD0004	513.1	29990.3	59205.8	1779.6	Kora
11-09-19	EKDD0005	549.7	30075.6	58951.2	1872.5	Kora
10-09-19	EKDD0006	350.7	29990.2	59205.6	1779.8	Kora
29-09-19	EKDD0007	284.9	30077.3	58950.5	1873.1	Kora
24-10-19	EKDD0007A	500.4	30077.3	58950.5	1873.1	Kora
07-10-19	EKDD0008	480.3	29993.8	59201.9	1779.9	Kora
10-01-20	EKDD0009	465.8	30077.3	58950.5	1873.1	Kora
06-11-19	EKDD0010	413.9	29993.5	59202.4	1780	Kora
03-03-20	EKDD0011	602.7	30087.9	58950.9	1872	Kora
24-11-19	EKDD0012	309.9	29993.5	59202.4	1780	Kora
21-12-19	EKDD0014	370.1	29993.5	59202.4	1780	Kora
25-01-20	EKDD0016	517	29993.5	59202.4	1780	Kora
26-02-20	EKDD0017	569.2	30005.9	59202.7	1779.6	Kora
date	hole_id	max_depth	х	У	Z	prospect_name
15/09/2018	KMDD0102	150.1	29868.97	58904	1189.17	Kora
10/11/2018	KMDD0103	233.2	29880.03	58815.18	1191.47	Kora
27/09/2018	KMDD0104	122	29868.91	58901.86	1189.52	Kora
1/10/2018	KMDD0105	192.2	29880.37	58821.39	1196.01	Kora
11/10/2018	KMDD0106	108.9	29868.53	58899.1	1192.69	Kora
9/12/2018	KMDD0107	130.1	29876.27	59006.2	1188.31	Kora
21/10/2018	KMDD0108	130.6	29868.92	58899.68	1190.66	Kora
12/12/2018	KMDD0109	96.9	29876.49	59006.07	1191.27	Kora
5/11/2018	KMDD0110	111.2	29869.07	58899.92	1189.77	Kora
8/11/2018	KMDD0110A	133.6	29869.07	58899.92	1189.77	Kora

20/12/2018	KMDD0111	104.5	29874.55	59005.8	1188.96	Kora
8/01/2019	KMDD0112	120.5	29874.32	59005.87	1188.05	Kora
24/12/2018	KMDD0113	89.7	29849.4	58777.68	1191.99	Kora
12/01/2019	KMDD0114	103.7	29875.01	59005.58	1191.65	Kora
17/02/2019	KMDD0115	323.5	29951.71	59038.22	1194.79	Kora
19/02/2019	KMDD0115A	700.6	29951.71	59038.22	1194.79	Kora
16/01/2019	KMDD0116	113	29873.51	59003.67	1188.06	Kora
5/04/2019	KMDD0117	395.2	29951.73	59037.81	1195.47	Kora
20/01/2019	KMDD0118	97.3	29874.22	59003.75	1192.03	Kora
20/01/2019	KMDD0119	368.1	29951.7	59037.74	1199.34	Kora
26/01/2019	KMDD0120	122	29874.47	59001.47	1188.06	Kora
1/02/2019	KMDD0121	305	29935.49	58928.02	1210.88	Kora
2/02/2019	KMDD0122	172.7	29876.13	59000.82	1188.19	Kora
1/03/2019	KMDD0123	299.9	29951.06	59039.15	1195.08	Kora
8/02/2019	KMDD0124	113.1	29868.47	58900.45	1192.21	Kora
18/02/2019	KMDD0126	138.3	29868.53	58900.49	1191.21	Kora
3/07/2019	KMDD0127	316.6	29936.08	58928.26	1210.87	Kora
20/02/2019	KMDD0128	98.55	29868.54	58900.43	1190.52	Kora
1/04/2019	KMDD0129	300.65	29951.25	59041.64	1195.19	Kora
11/03/2019	KMDD0130	112.4	29868.72	58900.75	1189.82	Kora
3/07/2019	KMDD0131	327	29951.42	59041.49	1194.81	Kora
13/03/2019	KMDD0132	50.5	29805.01	59070.85	1175.53	Kora
29/07/2019	KMDD0133	373.1	29934.97	58927.48	1210.87	Kora
7/08/2019	KMDD0133A	437.2	29934.97	58927.48	1210.87	Kora
7/08/2019	KMDD0134	70	29894.52	59317.56	1207.37	Kora
22/07/2019	KMDD0135	419.1	29951.58	59042.01	1194.66	Kora
4/9/19	KMDD0136	50	29966.51	60084.71	1041.23	Kora
24/08/2019	KMDD0137	470.5	29951.69	59041.96	1194.687	Kora
4/10/19	KMDD0138	57.5	30351.14	60647.31	925.4	Judd
27/08/2019	KMDD0139	429.75	29935.28	58927.83	1210.931	Kora
12/04/2019	KMDD0140	136.6	29868.87	58900.72	1189.66	Kora

11/09/2019	KMDD0141	589.3	29951.99	59041.79	1194.654	Kora
17/04/2019	KMDD0142	92.3	29868.64	58901.23	1192.15	Kora
22/09/2019	KMDD0143	541.1	29935.44	58927.89	1210.769	Kora
21/04/2019	KMDD0144	135.7	29868.67	58901.13	1189.69	Kora
12/10/2019	KMDD0145	709.3	29954.47	59039.63	1194.671	Kora
5/05/2019	KMDD0146	84.5	29868.46	58901.97	1192.6	Kora
13/10/2019	KMDD0147	287.3	29934.8	58927.21	1211.286	Kora
23/10/2019	KMDD0147A	355.5	29934.8	58927.21	1211.286	Kora
10/05/2019	KMDD0148	124.4	29868.56	58901.92	1189.97	Kora
30/10/2019	KMDD0149	624.5	29955.42	59040.57	1194.64	Kora
12/05/2019	KMDD0150	160.7	29868.95	58901.94	1189.75	Kora
13/11/2019	KMDD0151	361.7	29935.61	58926.43	1211.659	Kora
1/06/2019	KMDD0152	149.1	29868.8	58901.97	1193.97	Kora
12/11/2019	KMDD0153	417.2	29921.65	58995.29	1162.316	Kora
10/06/2019	KMDD0154	150	29868.54	58902.77	1189.57	Kora
27/11/2019	KMDD0155	176.3	29840.17	58760.28	1211.872	Kora
20/06/2019	KMDD0156	106.7	29868.94	58902.66	1193.59	Kora
19/11/2019	KMDD0157	268	29921.68	58994.25	1162.78	Kora
25/06/2019	KMDD0158	95.6	29867.89	58902.98	1190.54	Kora
30/11/2019	KMDD0159	384.3	29922.03	58994.45	1163.197	Kora
28/06/2019	KMDD0160	271.8	29869.13	58902.55	1189.21	Kora
13/12/2019	KMDD0161	164.5	29841.38	58760.28	1211.015	Kora
30/06/2019	KMDD0162	88	29869.99	58885.04	1208.64	Kora
17/12/2019	KMDD0163	428.7	29989.78	59118.53	1185.931	Kora
2/07/2019	KMDD0164	94.3	29869.55	58884.21	1208.79	Kora
1/01/2020	KMDD0165	229	29841.23	58760.22	1210.501	Kora
7/07/2019	KMDD0166	89.9	29869.57	58883.42	1208.84	Kora
23/12/2019	KMDD0167	100.7	29825.6	58898.6	1177.3	Kora
15/07/2019	KMDD0168	127.2	29870.58	58902.15	1188.702	Kora
7/01/2020	KMDD0169	437.9	29989.75	59118.96	1185.949	Kora
25/07/2019	KMDD0170	125	29868.94	58901.34	1189.556	Kora

15/01/2020	KMDD0171	171	29856.5	58687.22	1213.193	Kora
7/08/2019	KMDD0172	109.4	29868.64	58901.19	1194.456	Kora
25/01/2020	KMDD0173	335.9	29922.15	58995.45	1162.703	Kora
18/08/2019	KMDD0174	268.5	29868.97	58900.85	1189.566	Kora
25/01/2020	KMDD0175	192.4	29856.15	58687.15	1214.973	Kora
24/08/2019	KMDD0176	122.4	29868.56	58899.46	1191.357	Kora
10/02/2020	KMDD0177	270.9	29856.21	58687.39	1212.546	Kora
30/08/2019	KMDD0178	170	29868.81	58900.66	1189.695	Kora
4/02/2020	KMDD0179	324.6	29922.12	58995.09	1162.502	Kora
15/02/2020	KMDD0179A	398.6	29922.12	58995.09	1162.502	Kora
4/09/2019	KMDD0180	164.4	29868.61	58902.84	1189.41	Kora
3/11/2020	KMDD0181	593.3	29921.94	58994.34	1162.438	Kora
15/09/2019	KMDD0182	221.3	29868.84	58900.21	1189.792	Kora
14/02/2020	KMDD0183	44.4	29837.46	58829.65	1210.218	Kora
24/09/2019	KMDD0184	177.6	29868.82	58900.18	1189.826	Kora
20/03/2020	KMDD0185	52.2	29837.3	58826.96	1212.11	Kora
2/10/2019	KMDD0186	177.9	29868.68	58900.06	1192.437	Kora
3/10/2020	KMDD0187	242.9	29856.12	58689.65	1211.714	Kora
11/10/2019	KMDD0188	201.8	29868.64	58900.12	1193.17	Kora
22/02/2020	KMDD0189	50	29837.48	58828.26	1210.05	Kora
23/10/2019	KMDD0190	346.8	29990.56	59117.67	1185.569	Kora
2/11/2019	KMDD0192	303.5	29990.59	59117.1	1186.296	Kora
16/11/2019	KMDD0194	250.6	29880.97	58807.77	1196.528	Kora
10/12/2019	KMDD0196	245.4	29881.29	58807.67	1199.232	Kora
18/12/2019	KMDD0198	123	29879.72	58807.6	1197.355	Kora
31/12/2019	KMDD0200	166.8	29880.18	58808	1199.249	Kora
12/01/2020	KMDD0202	187.9	29879.79	58807.98	1196.48	Kora
20/01/2020	KMDD0204	159.1	29879.79	58807.68	1196.355	Kora
20/04/2020	KMDD0206	192.3	29880.17	58807.93	1196.297	Kora
1/02/2020	KMDD0206A	182.1	29880.17	58807.93	1196.297	Kora
3/16/2020	KMDD0212	288.5	29881.26	58807.71	1196.249	Kora

3/17/2020	KMDD0212A	288.5	29881.26	58807.71	1196.249	Kora

**APPENDIX 2: SIGNIFICANT DRILL INTERSECTIONS KORA DEPOSIT** 

Hole_id	From (m)	To (m)	True width (m)	Gold g/t	Copper %	Metal Accumulation. Factor (gm)
EKDD0001	378.0	378.8	0.44	0.36	0.36	0.2
EKDD0001	387.0	396.5	6.08	1.77	1.09	10.8
EKDD0001	411.0	417.2	3.97	1.67	1.64	6.6
EKDD0001	420.0	421.5	0.96	0.19	0.32	0.2
EKDD0002	254.0	260.8	6.16	2.83	0.28	17.4
EKDD0002	284.8	301.3	14.81	0.72	0.36	10.7
EKDD0002	322.4	331.1	7.83	1.20	1.13	9.4
EKDD0002	339.7	342.8	2.76	0.32	0.90	0.9
EKDD0003A	505.0	513.0	4.06	31.74	0.52	128.9
EKDD0003A	516.4	519.9	1.79	3.56	1.13	6.4
EKDD0003A	534.0	539.8	3.13	0.22	0.24	0.7
EKDD0004	400.0	403.4	1.11	0.38	0.18	0.4
EKDD0004	413.8	419.1	2.63	1.20	0.11	3.2
EKDD0004	423.8	435.0	3.73	0.29	0.30	1.1
EKDD0004	451.3	455.9	1.53	0.79	0.85	1.2
EKDD0005	452.1	455.3	2.26	0.61	1.28	1.4
EKDD0005	460.0	465.0	3.53	0.25	0.71	0.9
EKDD0005	512.0	515.5	2.47	0.22	2.69	0.6
EKDD0005	524.5	527.6	2.19	0.76	0.92	1.7
EKDD0006	258.2	263.3	3.53	3.42	0.77	12.1
EKDD0006	275.2	278.6	2.37	0.40	0.38	0.9
EKDD0006	282.7	292.1	6.59	0.59	0.52	3.9
EKDD0006	317.0	326.7	6.98	4.86	0.20	33.9
EKDD0007A	421.7	425.7	2.59	17.09	1.22	44.2
EKDD0007A	428.0	432.4	2.82	0.40	0.23	1.1
EKDD0007A	443.0	445.7	1.74	0.17	0.55	0.3

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EKDD0008	326.6	334.0	2.91	1.69	0.55	4.9
EKDD0008	348.5	368.0	7.64	1.19	0.80	9.1
EKDD0008	438.5	454.4	6.58	1.74	0.14	11.5
EKDD0009	352.3	358.0	3.55	4.17	2.56	14.8
EKDD0009	359.6	363.6	2.49	0.63	0.12	1.6
EKDD0009	365.9	374.0	5.04	1.10	0.36	5.5
EKDD0009	388.2	393.3	3.14	0.12	0.20	0.4
EKDD0010	274.0	280.7	2.43	0.41	0.15	1.0
EKDD0010	282.5	289.8	2.65	0.31	0.40	0.8
EKDD0010	292.4	311.0	6.76	0.27	0.45	1.9
EKDD0010	315.0	322.3	2.65	3.23	0.61	8.6
EKDD0011	532.0	541.0	4.87	6.07	0.35	29.6
EKDD0011	549.1	552.9	2.06	0.12	0.39	0.2
EKDD0011	553.9	559.7	3.14	0.65	0.11	2.1
EKDD0012	155.1	156.0	0.54	0.86	0.01	0.5
EKDD0012	192.0	200.2	4.96	0.37	0.08	1.8
EKDD0012	202.3	211.8	5.74	1.24	0.99	7.1
EKDD0012	214.0	217.0	1.82	0.40	0.21	0.7
EKDD0014	257.9	275.9	12.24	1.00	1.09	12.3
EKDD0014	289.8	291.8	1.37	0.46	1.13	0.6
EKDD0014	292.3	293.0	0.42	0.55	1.19	0.2
EKDD0016	327.0	332.6	2.41	3.55	1.02	8.6
EKDD0016	342.2	344.8	1.10	0.80	1.10	0.9
EKDD0016	360.0	368.8	3.80	4.37	2.29	16.6
EKDD0016	377.2	385.6	3.59	1.35	0.45	4.9
EKDD0017	406.7	407.8	0.39	5.09	0.32	2.0
EKDD0017	410.2	415.9	2.01	2.26	0.35	4.5
EKDD0017	444.8	450.6	2.05	0.42	0.16	0.9
EKDD0017	468.3	472.0	1.31	7.23	0.90	9.5

EKDD0017	536.8	541.5	1.66	2.59	0.27	4.3
JDD0001	104.0	109.1	5.07	1.01	0.19	5.1
KMDD0103	152.9	156.8	1.73	3.51	0.41	6.1
KMDD0103	171.3	174.3	1.33	1.41	0.23	1.9
KMDD0103	190.8	192.0	0.54	1.10	0.42	0.6
KMDD0103	196.5	197.4	0.40	1.33	0.79	0.5
KMDD0103	197.4	197.7	0.13	1.16	0.23	0.2
KMDD0103	197.7	198.1	0.18	1.71	0.16	0.3
KMDD0103	205.2	225.5	9.09	2.14	0.99	19.5
KMDD0103	225.5	226.5	0.46	1.16	0.16	0.5
KMDD0104	51.6	52.8	0.93	8.11	0.26	7.5
KMDD0104	57.2	61.0	2.84	12.02	0.12	34.2
KMDD0104	72.0	78.9	5.16	5.90	0.17	30.4
KMDD0104	82.0	82.4	0.30	1.95	2.00	0.6
KMDD0104	86.8	89.4	2.10	1.25	0.59	2.6
KMDD0104	109.2	111.7	1.98	1.37	0.83	2.7
KMDD0105	96.8	98.4	1.03	3.52	0.37	3.6
KMDD0105	111.9	113.9	1.30	4.73	1.44	6.2
KMDD0105	118.2	124.2	3.89	43.20	0.51	168.1
KMDD0105	153.5	162.3	5.69	0.29	0.61	1.6
KMDD0106	77.3	80.0	1.68	5.87	0.61	9.8
KMDD0106	82.2	85.3	1.93	7.45	0.09	14.4
KMDD0106	85.3	87.0	1.09	1.15	0.07	1.2
KMDD0106	88.1	89.0	0.58	1.41	0.01	0.8
KMDD0106	91.0	92.0	0.63	1.80	0.16	1.1
KMDD0106	98.2	100.2	1.27	14.09	1.42	17.8
KMDD0107	31.5	40.8	5.52	1.82	0.29	10.1
KMDD0107	108.5	113.5	3.52	2.01	0.77	7.1
KMDD0108	80.5	87.5	4.93	10.08	0.25	49.7

KMDD0108	89.8	97.8	5.62	17.16	0.54	96.5
KMDD0108	99.7	107.2	5.27	2.38	0.95	12.6
KMDD0108	112.1	119.8	5.43	2.53	2.82	13.7
KMDD0109	36.0	42.0	3.54	5.47	0.51	19.4
KMDD0109	53.0	54.5	0.76	0.96	1.58	0.7
KMDD0109	74.2	78.5	2.71	6.28	0.97	17.0
KMDD0110	4.5	5.5	0.58	1.25	0.03	0.7
KMDD0110	79.9	83.4	2.02	35.73	0.28	72.1
KMDD0110	88.0	93.6	3.20	6.83	0.12	21.9
KMDD0110	99.7	100.3	0.31	3.21	0.13	1.0
KMDD0110	100.3	101.5	0.80	1.01	0.03	0.8
KMDD0110	101.5	102.5	0.64	1.06	0.15	0.7
KMDD0110	105.1	106.0	0.55	2.14	0.27	1.2
KMDD0110	106.0	106.6	0.42	1.37	0.57	0.6
KMDD0110	107.2	110.6	2.21	10.78	0.59	23.9
KMDD0110A	107.0	113.2	3.99	23.59	0.50	94.1
KMDD0110A	114.7	115.9	0.74	1.67	0.22	1.2
KMDD0110A	122.1	127.1	3.22	2.77	1.22	8.9
KMDD0111	22.4	27.8	3.16	5.74	0.03	18.1
KMDD0111	31.6	35.1	2.97	1.93	0.17	5.7
KMDD0111	75.9	80.9	4.22	3.74	0.48	15.8
KMDD0111	82.8	90.6	7.10	6.20	0.96	44.0
KMDD0112	26.7	36.6	7.55	3.15	0.14	23.8
KMDD0112	99.2	104.6	3.80	1.26	1.06	4.8
KMDD0112	109.3	110.2	0.67	0.81	2.52	0.5
KMDD0113	50.8	53.9	2.33	35.02	0.66	81.8
KMDD0113	56.8	62.8	4.55	6.35	0.42	28.9
KMDD0113	64.8	70.0	3.94	5.21	1.02	20.6
KMDD0113	74.4	81.1	5.08	5.16	3.61	26.2

KMDD0114	22.7	24.1	0.94	1.55	0.61	1.5
KMDD0114	34.3	38.1	2.62	12.18	0.06	31.9
KMDD0114	70.1	73.2	2.66	1.81	0.34	4.8
KMDD0115	295.5	303.8	6.64	2.20	1.07	14.6
KMDD0115	307.9	315.5	6.10	0.40	0.35	2.4
KMDD0115	321.0	321.9	0.72	6.51	0.11	4.7
KMDD0115A	301.6	302.1	1.49	3.50	0.10	5.2
KMDD0115A	306.4	319.3	6.59	0.53	0.19	3.5
KMDD0115A	342.2	346.6	2.87	0.40	2.07	1.2
KMDD0115A	360.8	363.3	1.61	0.47	2.15	0.8
KMDD0115A	377.0	379.3	1.49	0.36	0.86	0.5
KMDD0115A	432.8	440.0	4.64	2.57	0.40	11.9
KMDD0116	26.4	28.9	1.96	11.76	0.48	23.0
KMDD0116	31.7	35.5	2.96	5.29	0.43	15.6
KMDD0116	38.6	39.5	0.73	1.41	1.59	1.0
KMDD0116	96.0	99.2	2.62	4.96	0.62	13.0
KMDD0117	281.4	283.3	0.89	1.09	0.12	1.0
KMDD0117	292.9	300.0	3.34	4.39	0.25	14.7
KMDD0117	312.2	313.4	0.56	24.09	0.14	13.5
KMDD0117	335.5	339.0	1.82	1.46	0.83	2.7
KMDD0117	358.0	364.2	3.26	2.43	0.91	7.9
KMDD0118	32.1	36.3	2.98	28.15	0.10	83.8
KMDD0118	48.1	50.2	1.79	1.46	0.42	2.6
KMDD0118	66.0	68.7	2.28	1.20	0.25	2.7
KMDD0118	81.0	81.8	0.68	1.53	0.07	1.0
KMDD0118	87.0	87.8	0.66	7.00	0.01	4.6
KMDD0119	5.0	5.9	0.30	1.07	0.20	0.3
KMDD0119	95.0	96.0	0.33	27.22	0.01	9.1
KMDD0119	264.0	278.8	4.93	8.13	0.11	40.1

KNADDO110	270.2	212 5	11 12	2.00	1 54	25.2
KMDD0119	279.2	313.5	11.43	3.09	1.54	35.3
KMDD0119	314.5	314.8	0.10	1.25	0.02	0.1
KMDD0119	326.9	330.6	1.67	39.88	0.25	66.4
KMDD0119	344.3	344.5	0.10	1.24	0.43	0.1
KMDD0119	5.0	5.9	0.30	1.07	0.20	0.3
KMDD0119	95.0	96.0	0.33	27.22	0.01	9.1
KMDD0119	264.0	313.5	16.47	4.58	1.10	75.5
KMDD0119	314.5	314.8	0.10	1.25	0.02	0.1
KMDD0119	326.9	330.6	1.67	39.88	0.25	66.4
KMDD0119	344.3	344.5	0.10	1.24	0.43	0.1
KMDD0120	31.0	39.9	5.65	15.86	0.48	89.7
KMDD0120	39.9	42.8	1.88	1.06	0.34	2.0
KMDD0120	44.5	45.0	0.29	3.48	2.63	1.0
KMDD0120	47.6	49.6	1.28	1.70	1.00	2.2
KMDD0120	101.7	104.6	1.71	2.05	1.17	3.5
KMDD0120	107.6	108.5	0.54	1.01	0.15	0.5
KMDD0121	0.0	0.4	0.23	16.10	0.10	3.7
KMDD0121	166.5	178.7	7.09	3.63	0.22	25.8
KMDD0121	189.0	196.6	4.67	1.96	0.25	9.2
KMDD0121	201.1	201.9	0.49	1.43	0.04	0.7
KMDD0121	202.9	213.0	6.39	6.55	0.39	41.8
KMDD0121	218.3	219.2	0.54	1.04	0.04	0.6
KMDD0121	246.7	246.8	0.07	1.02	0.01	0.1
KMDD0121	278.7	280.3	1.01	12.58	2.35	12.7
KMDD0122	43.7	62.3	8.13	10.38	0.74	84.4
KMDD0122	64.9	65.5	0.25	5.61	0.08	1.4
KMDD0122	70.3	70.7	0.26	4.09	2.12	1.1
KMDD0122	74.4	79.0	2.97	3.72	1.62	11.1
KMDD0122	155.7	157.7	1.00	0.91	3.42	0.9

KMDD0123	141.7	146.9	3.77	10.78	0.09	40.6
KMDD0123	149.4	152.2	2.45	1.12	0.05	2.7
KMDD0123	214.4	216.3	1.46	0.79	0.22	1.1
KMDD0124	63.6	71.0	4.63	116.49	0.96	539.5
KMDD0124	78.0	79.1	0.68	1.46	2.27	1.0
KMDD0124	82.1	95.7	10.29	7.64	0.31	78.6
KMDD0126	63.1	70.5	5.44	17.05	0.24	92.8
KMDD0126	73.5	76.6	2.27	8.43	0.02	19.2
KMDD0126	79.2	95.0	11.63	3.16	0.46	36.8
KMDD0126	98.7	100.7	1.47	1.38	0.15	2.0
KMDD0126	106.2	106.6	0.33	1.16	2.17	0.4
KMDD0127	217.6	229.3	4.86	8.16	0.37	39.6
KMDD0127	240.3	241.9	0.72	5.34	0.23	3.8
KMDD0127	253.0	264.0	5.07	0.61	1.07	3.1
KMDD0127	217.6	229.3	4.86	8.16	0.37	39.6
KMDD0127	229.3	230.0	0.29	2.00	0.04	0.6
KMDD0127	230.0	231.0	0.42	1.28	0.08	0.5
KMDD0127	235.0	236.4	0.57	1.03	0.05	0.6
KMDD0127	236.4	237.7	0.60	1.84	0.03	1.1
KMDD0127	240.3	241.9	0.72	5.34	0.23	3.8
KMDD0127	247.0	248.3	0.60	1.42	0.05	0.9
KMDD0127	250.0	251.1	0.52	1.90	0.10	1.0
KMDD0127	253.0	264.0	5.07	0.61	1.07	3.1
KMDD0127	297.1	298.1	0.47	4.33	0.77	2.0
KMDD0128	68.8	70.9	1.44	363.91	0.08	522.2
KMDD0128	76.0	79.9	2.93	2.55	0.46	7.5
KMDD0128	86.6	98.0	7.98	7.61	1.26	60.7
KMDD0129	62.0	63.0	0.67	2.08	0.01	1.4
KMDD0129	125.5	133.2	5.14	18.39	0.22	94.5

KMDD0129	139.0	142.0	1.91	2.21	0.55	4.2
KMDD0129	210.8	213.3	1.62	2.50	0.25	4.0
KMDD0129	232.3	232.5	0.12	1.23	3.02	0.2
KMDD0130	67.2	72.7	3.70	7.53	0.16	27.9
KMDD0130	75.7	83.0	5.42	0.40	0.56	2.2
KMDD0130	94.0	95.0	0.62	1.35	1.74	0.8
KMDD0130	96.0	103.3	4.52	7.35	1.48	33.2
KMDD0130	106.9	108.0	0.68	1.84	0.01	1.3
KMDD0131	144.3	145.0	0.34	7.30	0.01	2.5
KMDD0131	163.3	172.8	4.36	1.77	0.08	7.7
KMDD0131	276.5	281.4	2.79	0.85	0.15	2.4
KMDD0132	94.0	95.0	0.62	1.35	1.74	0.8
KMDD0132	96.0	103.3	4.52	7.35	1.48	33.2
KMDD0132	106.9	108.0	0.68	1.84	0.01	1.3
KMDD0132	2.3	8.3	4.52	0.41	0.34	1.9
KMDD0133	215.6	216.2	0.25	3.58	2.51	0.9
KMDD0133	268.7	269.4	0.29	1.34	0.17	0.4
KMDD0133	280.8	282.1	0.53	2.70	2.29	1.4
KMDD0133	286.0	287.0	0.41	1.47	0.05	0.6
KMDD0133	293.3	305.2	4.94	5.53	0.29	27.3
KMDD0133	306.4	323.9	13.35	6.05	0.52	80.8
KMDD0133	328.6	360.0	10.70	3.56	0.68	38.1
KMDD0133A	334.0	359.1	8.55	4.27	0.64	36.5
KMDD0135	193.0	203.9	5.95	1.99	0.09	11.8
KMDD0135	329.3	330.1	0.49	2.54	0.02	1.2
KMDD0135	334.7	338.6	2.33	0.13	0.25	0.3
KMDD0137	186.0	187.0	0.51	4.00	0.01	2.0
KMDD0137	204.1	219.4	7.80	2.14	0.23	16.7
KMDD0137	311.0	311.3	0.20	0.09	1.17	0.0

KMDD0137	324.2	326.4	1.23	0.71	0.28	0.9
KMDD0137	329.3	329.5	0.11	1.29	0.13	0.1
KMDD0139	276.0	278.2	0.97	6.03	0.68	5.9
KMDD0139	297.0	305.0	3.53	1.60	0.32	5.7
KMDD0139	312.0	323.0	3.30	1.15	2.42	3.8
KMDD0139	348.0	349.0	0.74	0.11	1.86	0.1
KMDD0139	353.1	356.0	1.51	0.37	1.79	0.6
KMDD0139	374.8	380.0	2.69	2.50	1.10	6.7
KMDD0139	388.0	391.6	1.86	1.07	0.48	2.0
KMDD0139	417.4	418.0	0.33	0.23	4.54	0.1
KMDD0140	72.9	76.4	2.19	14.71	0.61	32.2
KMDD0140	78.8	91.6	7.95	2.57	0.28	20.5
KMDD0140	95.3	96.7	0.86	1.57	0.01	1.4
KMDD0140	100.6	117.4	9.93	7.65	1.74	75.9
KMDD0141	235.7	237.4	0.49	1.33	0.11	0.7
KMDD0141	242.5	260.7	5.28	2.77	0.11	14.6
KMDD0141	262.7	264.0	0.38	1.76	0.19	0.7
KMDD0141	267.4	274.2	3.51	3.15	0.15	11.1
KMDD0141	395.1	398.4	1.51	0.39	0.20	0.6
KMDD0141	400.9	407.8	3.16	3.76	2.42	11.9
KMDD0141	410.4	411.1	0.32	2.06	0.33	0.7
KMDD0142	45.8	46.2	0.28	2.65	3.81	0.7
KMDD0142	47.7	57.9	8.30	26.02	0.80	216.1
KMDD0142	64.9	65.5	0.49	2.99	0.26	1.5
KMDD0142	66.9	74.9	7.28	49.82	0.34	362.5
KMDD0142	74.9	75.5	0.91	1.24	0.08	1.1
KMDD0142	76.3	76.9	0.91	2.07	0.23	1.9
KMDD0142	78.0	79.0	0.91	1.94	0.27	1.8
KMDD0142	79.0	79.7	0.91	0.12	0.01	0.1

VA 4D D 04 42	400.0	402.0	0.00	F 00	4.46	4.7
KMDD0143	400.0	402.0	0.92	5.09	4.16	4.7
KMDD0143	445.3	448.1	0.83	3.48	0.51	2.9
KMDD0143	453.0	460.4	3.54	23.72	1.71	84.0
KMDD0143	472.0	476.3	2.06	1.61	2.16	3.3
KMDD0144	58.4	71.4	8.13	2.62	0.27	21.3
KMDD0144	73.4	74.4	0.63	1.50	0.18	0.9
KMDD0144	76.1	89.3	8.29	2.44	0.37	20.2
KMDD0144	96.9	99.8	1.71	22.26	0.60	38.0
KMDD0145	362.8	368.3	1.51	11.71	0.04	17.7
KMDD0145	362.8	368.3	1.51	11.71	0.04	17.7
KMDD0145	24.3	25.0	0.19	1.23	0.01	0.2
KMDD0145	27.3	29.1	0.49	1.15	0.01	0.6
KMDD0145	270.0	271.0	0.27	1.41	0.03	0.4
KMDD0145	288.0	290.9	0.80	9.46	0.10	7.5
KMDD0145	308.2	309.2	0.27	1.21	0.16	0.3
KMDD0145	358.0	359.0	0.27	1.25	0.26	0.3
KMDD0145	566.2	566.6	0.14	1.15	2.93	0.2
KMDD0145	653.2	654.3	0.38	1.45	0.02	0.6
KMDD0145	674.8	675.5	0.27	2.28	0.07	0.6
KMDD0145	472.0	479.0	1.92	0.18	0.10	0.4
KMDD0146	42.7	48.0	4.36	53.85	0.76	234.8
KMDD0146	54.0	65.0	9.05	6.33	0.40	57.3
KMDD0146	72.2	76.0	3.35	8.81	1.94	29.5
KMDD0147	240.7	241.1	0.18	8.21	1.01	1.5
KMDD0147	267.5	281.1	6.44	107.55	1.50	692.1
KMDD0147	240.7	241.1	0.18	8.21	1.01	1.5
KMDD0147	267.5	281.1	6.44	107.55	1.50	692.1
KMDD0147A	265.4	278.4	6.15	288.73	0.77	1776.0
KMDD0147A	265.4	278.4	6.15	288.73	0.77	1776.0

KMDD0148	46.2	52.0	4.56	8.36	0.63	38.1
KMDD0148	54.9	66.0	9.60	1.28	0.89	12.3
KMDD0148	74.5	80.1	5.03	19.22	1.58	96.7
KMDD0149	152.5	154.5	0.62	2.38	1.49	1.5
KMDD0149	333.4	335.0	0.50	1.31	0.52	0.7
KMDD0149	385.0	395.3	3.21	3.43	0.26	11.0
KMDD0149	399.0	401.5	0.79	1.87	0.58	1.5
KMDD0149	495.3	499.9	1.72	1.58	1.16	2.7
KMDD0149	610.2	612.8	0.97	0.57	0.11	0.6
KMDD0150	56.6	63.4	5.84	6.00	0.79	35.0
KMDD0150	71.2	93.6	13.25	2.51	0.71	33.3
KMDD0150	96.2	103.5	4.99	8.39	0.40	41.9
KMDD0150	107.0	108.7	1.15	1.55	0.51	1.8
KMDD0152	49.7	57.1	4.70	30.95	0.44	145.5
KMDD0152	58.0	59.9	1.70	2.07	0.11	3.5
KMDD0152	69.2	73.0	3.50	2.80	0.23	9.8
KMDD0153	111.2	112.0	0.40	7.11	0.01	2.8
KMDD0153	157.6	163.3	2.67	6.62	0.14	17.7
KMDD0153	168.0	170.0	0.94	1.22	0.88	1.1
KMDD0153	265.2	266.9	1.91	48.57	1.31	92.8
KMDD0154	20.4	21.4	0.74	11.42	0.01	8.4
KMDD0154	47.6	52.0	3.33	2.33	0.34	7.7
KMDD0154	57.3	63.3	4.30	2.07	0.24	8.9
KMDD0154	70.0	75.9	4.26	11.88	0.65	50.6
KMDD0154	95.8	98.4	1.74	4.09	0.28	7.1
KMDD0154	107.0	107.7	0.47	1.74	0.20	0.8
KMDD0154	126.2	126.8	0.42	1.42	0.61	0.6
KMDD0155	90.6	106.3	8.03	8.27	0.79	66.3
KMDD0155	116.9	128.6	4.92	2.85	1.59	14.0

KMDD0155	130.1	140.0	3.76	1.05	1.32	4.0
KMDD0155	167.9	175.3	3.12	13.87	0.59	43.3
KMDD0155	66.0	67.0	0.51	4.96	0.18	2.5
KMDD0155	71.5	72.4	0.49	2.37	0.03	1.2
KMDD0155	90.6	106.3	8.03	8.27	0.79	66.3
KMDD0155	116.9	128.6	4.92	2.85	1.59	14.0
KMDD0155	130.1	140.0	3.76	1.05	1.32	4.0
KMDD0155	160.2	160.9	0.30	1.25	0.32	0.4
KMDD0155	167.9	175.3	3.12	13.87	0.59	43.3
KMDD0156	49.7	55.1	3.52	52.68	0.46	185.4
KMDD0156	69.2	74.4	3.94	12.61	0.92	49.7
KMDD0157	145.6	153.9	3.74	5.24	0.68	19.6
KMDD0157	211.8	219.0	3.80	0.87	0.26	3.3
KMDD0157	145.6	153.9	3.74	5.24	0.68	19.6
KMDD0157	211.8	219.0	3.80	0.87	0.26	3.3
KMDD0157	252.3	254.0	0.90	8.99	0.04	8.1
KMDD0158	37.1	40.4	3.20	20.29	0.43	64.9
KMDD0158	47.5	64.0	15.99	1.09	0.57	17.5
KMDD0158	67.4	70.7	3.00	3.80	2.82	11.4
KMDD0159	168.9	171.7	1.24	14.74	0.14	18.2
KMDD0159	176.1	177.8	0.77	1.05	0.35	0.8
KMDD0159	179.1	184.7	4.07	4.56	0.08	18.6
KMDD0159	189.4	191.9	1.80	1.56	0.38	2.8
KMDD0159	256.2	258.2	1.28	6.33	3.58	8.1
KMDD0159	260.2	265.0	3.11	3.26	0.18	10.2
KMDD0159	277.0	279.0	1.30	2.64	0.01	3.4
KMDD0159	352.6	356.9	2.63	3.25	0.03	8.5
KMDD0159	359.0	360.0	0.61	4.42	0.01	2.7
KMDD0160	79.2	82.8	1.57	8.85	0.94	13.9

KMDD0160	90.5	110.6	8.53	2.35	0.36	20.1
KMDD0160	144.2	153.0	3.77	2.35	0.35	8.9
KMDD0160	164.7	167.2	1.08	5.62	0.75	6.1
KMDD0161	121.4	129.1	2.95	1.38	0.37	4.1
KMDD0161	139.3	146.4	2.74	3.67	0.34	10.1
KMDD0161	163.2	164.5	0.55	3.13	9.95	1.7
KMDD0162	0.0	1.4	1.27	13.42	0.02	17.1
KMDD0162	40.1	41.9	1.65	0.41	3.12	0.7
KMDD0162	43.3	50.0	6.09	120.36	0.72	733.0
KMDD0162	53.0	57.0	3.68	2.41	0.70	8.9
KMDD0162	62.0	71.2	8.85	9.41	1.20	83.2
KMDD0163	295.2	309.5	4.31	5.74	0.12	24.7
KMDD0163	322.7	333.3	3.20	4.50	0.03	14.4
KMDD0163	361.6	366.2	1.98	1.42	0.36	2.8
KMDD0164	48.8	55.7	5.95	34.55	0.62	205.7
KMDD0164	61.8	75.1	12.50	10.23	1.43	127.9
KMDD0164	77.5	79.5	1.90	1.07	0.43	2.0
KMDD0165	60.2	61.6	0.58	1.54	0.00	0.9
KMDD0165	78.0	79.0	0.42	3.48	0.00	1.5
KMDD0165	96.3	97.3	0.42	7.36	0.00	3.1
KMDD0165	121.0	130.0	3.82	1.84	0.46	7.0
KMDD0165	152.0	161.9	6.53	2.06	0.34	13.5
KMDD0165	179.7	187.0	3.19	7.29	0.79	23.2
KMDD0165	199.5	203.9	1.91	1.40	0.28	2.7
KMDD0166	57.5	64.9	5.38	24.52	0.35	131.8
KMDD0166	71.6	75.6	2.91	16.55	0.34	48.2
KMDD0166	82.6	83.0	0.31	1.30	13.68	0.4
KMDD0166	83.0	83.6	0.44	1.20	0.37	0.5
KMDD0167	0.0	10.0	9.82	17.61	0.10	172.9

KMDD0167	12.0	17.1	5.01	8.52	0.44	42.6
KMDD0167	20.0	30.1	10.06	45.67	1.29	459.4
KMDD0168	47.5	51.6	2.94	20.53	0.29	60.3
KMDD0168	70.8	83.8	8.82	20.30	0.98	179.0
KMDD0168	56.5	56.7	0.15	3.89	0.10	0.6
KMDD0168	86.0	87.0	0.68	1.33	0.71	0.9
KMDD0169	276.9	283.7	3.32	2.27	0.38	7.5
KMDD0169	300.5	308.0	3.68	4.35	0.27	16.0
KMDD0169	314.6	318.5	2.88	4.17	0.02	12.0
KMDD0169	384.6	390.6	3.41	8.52	2.75	29.0
KMDD0170	66.9	81.1	9.81	6.15	0.19	60.4
KMDD0170	86.7	87.0	0.16	4.25	4.85	0.7
KMDD0170	90.5	96.1	3.36	8.09	0.02	27.2
KMDD0170	99.4	108.2	5.65	18.98	1.55	107.2
KMDD0170	116.0	118.0	1.27	8.67	0.24	11.0
KMDD0170	121.0	121.5	0.32	1.25	0.04	0.4
KMDD0171	159.5	171.0	4.59	4.98	1.44	22.8
KMDD0172	70.4	74.6	2.00	7.36	0.89	14.7
KMDD0172	87.4	91.0	3.74	1.10	0.52	4.1
KMDD0172	100.8	101.8	0.82	1.02	0.13	0.8
KMDD0173	231.2	241.0	2.51	2.49	0.03	6.2
KMDD0173	320.0	324.3	1.10	0.37	0.32	0.4
KMDD0174	108.1	111.8	1.92	4.01	0.10	7.7
KMDD0174	139.5	144.3	4.42	3.86	0.21	17.1
KMDD0174	159.8	163.9	2.30	5.01	0.80	11.5
KMDD0175	155.6	163.7	2.86	20.01	0.87	57.3
KMDD0175	163.7	165.0	0.46	1.06	0.38	0.5
KMDD0175	165.0	173.5	2.63	10.83	3.81	28.5
KMDD0175	183.9	189.1	1.60	0.65	1.62	1.0

KMDD0176	69.3	111.8	29.66	7.98	0.85	236.8
KMDD0177	24.4	25.4	0.33	2.52	0.04	0.8
KMDD0177	103.5	105.3	0.63	0.88	1.82	0.6
KMDD0177	176.8	178.0	0.49	2.94	0.01	1.5
KMDD0177	196.4	211.0	6.12	5.96	3.32	36.5
KMDD0178	93.6	99.4	3.39	9.30	0.20	31.5
KMDD0178	101.7	107.3	3.85	0.18	0.79	0.7
KMDD0178	114.0	114.4	0.27	7.26	0.66	2.0
KMDD0178	127.7	128.3	0.36	1.67	0.83	0.6
KMDD0178	133.5	134.7	0.73	2.72	0.28	2.0
KMDD0178	137.0	139.7	1.62	0.75	0.44	1.2
KMDD0178	144.2	151.0	4.09	16.44	0.70	67.3
KMDD0179	191.0	225.0	10.10	4.87	0.08	49.1
KMDD0179A	190.4	222.9	9.64	4.94	0.10	47.6
KMDD0179A	370.5	377.7	2.99	1.80	0.13	5.4
KMDD0180	57.6	63.2	3.69	5.31	0.55	19.6
KMDD0180	70.7	73.5	1.83	4.24	0.13	7.7
KMDD0180	78.4	84.0	6.32	6.34	0.80	40.0
KMDD0180	113.0	115.0	1.40	2.90	0.31	4.1
KMDD0180	124.7	125.7	0.70	0.62	0.43	0.4
KMDD0181	246.3	262.1	5.04	2.24	0.35	11.3
KMDD0181	369.9	380.3	4.58	24.81	0.28	113.6
KMDD0181	390.5	393.0	1.10	3.08	0.97	3.4
KMDD0181	421.0	427.7	2.95	2.51	1.16	7.4
KMDD0181	527.3	528.3	0.59	1.54	1.01	0.9
KMDD0181	549.2	552.0	1.68	5.36	8.39	9.0
KMDD0182	118.7	130.0	4.55	4.29	0.89	19.5
KMDD0182	131.8	134.3	1.01	1.53	0.21	1.6
KMDD0182	138.0	140.7	1.27	2.20	0.36	2.8

KMDD0182	148.2	151.9	1.75	1.37	0.28	2.4
KMDD0182	165.0	177.0	4.62	5.05	0.18	23.3
KMDD0182	178.8	182.4	1.39	0.90	0.01	1.2
KMDD0184	104.8	113.0	3.56	3.36	0.31	11.9
KMDD0184	119.1	121.7	1.08	0.73	3.29	0.8
KMDD0184	126.1	138.7	5.42	17.78	0.25	96.5
KMDD0184	104.8	113.0	3.56	3.36	0.31	11.9
KMDD0184	119.1	121.7	1.08	0.73	3.29	0.8
KMDD0184	126.1	138.7	5.42	17.78	0.25	96.5
KMDD0185	31.1	37.0	3.77	18.23	0.72	68.7
KMDD0185	39.7	49.1	6.30	4.92	0.52	31.0
KMDD0186	74.6	83.3	4.19	167.12	1.10	699.5
KMDD0186	94.2	103.0	4.05	8.09	1.72	32.8
KMDD0186	74.6	83.3	4.19	167.12	1.10	699.5
KMDD0186	94.2	103.0	4.05	8.09	1.72	32.8
KMDD0187	123.1	131.4	3.93	0.49	1.16	1.9
KMDD0187	133.9	138.8	2.51	0.40	0.65	1.0
KMDD0187	151.0	158.1	3.61	5.66	1.48	20.4
KMDD0187	163.3	167.8	2.63	2.08	1.47	5.5
KMDD0187	170.6	173.9	1.88	1.77	0.17	3.3
KMDD0188	74.0	83.2	5.05	4.23	0.23	21.3
KMDD0188	74.0	83.2	5.05	4.23	0.23	21.3
KMDD0188	104.3	105.6	0.69	0.32	0.58	0.2
KMDD0189	1.0	2.0	0.91	6.31	0.02	5.7
KMDD0189	26.0	28.7	2.46	5.29	0.13	13.0
KMDD0189	33.2	40.5	7.02	8.44	0.25	59.2
KMDD0189	45.7	50.0	4.04	45.98	7.39	185.8
KMDD0190	182.2	188.7	5.69	4.58	0.37	26.0
KMDD0190	255.4	258.1	2.04	0.25	1.04	0.5

KMDD0190         265.0         268.0         2.22         1.05         0.22         2.3           KMDD0190         274.5         275.0         0.37         2.15         0.01         0.8           KMDD0190         289.0         290.0         0.74         1.80         0.01         1.3           KMDD0190         328.7         329.2         0.37         1.47         0.02         0.5           KMDD0190         337.6         338.3         0.52         1.60         0.57         0.8           KMDD0192         158.5         162.1         2.89         27.24         0.04         78.6           KMDD0192         234.5         239.6         3.86         1.03         1.72         4.0           KMDD0192         272.9         273.1         0.21         7.52         1.54         1.6           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6					1	ı	T
KMDD0190         289.0         290.0         0.74         1.80         0.01         1.3           KMDD0190         328.7         329.2         0.37         1.47         0.02         0.5           KMDD0190         337.6         338.3         0.52         1.60         0.57         0.8           KMDD0192         158.5         162.1         2.89         27.24         0.04         78.6           KMDD0192         234.5         239.6         3.86         1.03         1.72         4.0           KMDD0192         272.9         273.1         0.21         7.52         1.54         1.6           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4	KMDD0190	265.0	268.0	2.22	1.05	0.22	2.3
KMDD0190         328.7         329.2         0.37         1.47         0.02         0.5           KMDD0190         337.6         338.3         0.52         1.60         0.57         0.8           KMDD0192         158.5         162.1         2.89         27.24         0.04         78.6           KMDD0192         234.5         239.6         3.86         1.03         1.72         4.0           KMDD0192         272.9         273.1         0.21         7.52         1.54         1.6           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         187.2         188.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         230.6         232.0	KMDD0190	274.5	275.0	0.37	2.15	0.01	0.8
KMDD0190         337.6         338.3         0.52         1.60         0.57         0.8           KMDD0192         158.5         162.1         2.89         27.24         0.04         78.6           KMDD0192         234.5         239.6         3.86         1.03         1.72         4.0           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         177.5         180.0         1.41         1.51         0.62         2.1           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0196         160.6         177.4	KMDD0190	289.0	290.0	0.74	1.80	0.01	1.3
KMDD0192         158.5         162.1         2.89         27.24         0.04         78.6           KMDD0192         234.5         239.6         3.86         1.03         1.72         4.0           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         177.5         180.0         1.41         1.51         0.62         2.1           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         295.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         185.0         193.6	KMDD0190	328.7	329.2	0.37	1.47	0.02	0.5
KMDD0192         234.5         239.6         3.86         1.03         1.72         4.0           KMDD0192         272.9         273.1         0.21         7.52         1.54         1.6           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         185.0         193.6	KMDD0190	337.6	338.3	0.52	1.60	0.57	0.8
KMDD0192         272.9         273.1         0.21         7.52         1.54         1.6           KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         177.5         180.0         1.41         1.51         0.62         2.1           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         185.0         193.6	KMDD0192	158.5	162.1	2.89	27.24	0.04	78.6
KMDD0194         154.3         155.7         0.70         0.64         1.43         0.5           KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         177.5         180.0         1.41         1.51         0.62         2.1           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         185.0         193.6         3.10         0.50         1.18         1.5           KMDD0196         233.6         240.8	KMDD0192	234.5	239.6	3.86	1.03	1.72	4.0
KMDD0194         164.0         173.5         5.07         1.11         2.33         5.6           KMDD0194         177.5         180.0         1.41         1.51         0.62         2.1           KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         185.0         193.6         3.10         0.50         1.18         1.5           KMDD0196         222.0         227.0         1.79         6.42         0.01         11.5           KMDD0198         57.0         59.0	KMDD0192	272.9	273.1	0.21	7.52	1.54	1.6
KMDD0194       177.5       180.0       1.41       1.51       0.62       2.1         KMDD0194       181.8       183.3       2.53       2.32       3.62       5.9         KMDD0194       187.2       188.3       0.63       0.21       2.69       0.1         KMDD0194       190.3       194.6       2.42       1.20       0.48       2.9         KMDD0194       205.0       206.4       0.77       0.08       1.09       0.1         KMDD0194       221.2       222.0       0.45       2.77       1.31       1.2         KMDD0194       230.6       232.0       0.77       2.04       1.06       1.6         KMDD0196       160.6       177.4       6.99       2.71       0.56       18.9         KMDD0196       179.0       183.2       1.74       10.30       4.02       17.9         KMDD0196       185.0       193.6       3.10       0.50       1.18       1.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       91.2       9	KMDD0194	154.3	155.7	0.70	0.64	1.43	0.5
KMDD0194         181.8         183.3         2.53         2.32         3.62         5.9           KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         179.0         183.2         1.74         10.30         4.02         17.9           KMDD0196         185.0         193.6         3.10         0.50         1.18         1.5           KMDD0196         222.0         227.0         1.79         6.42         0.01         11.5           KMDD0198         57.0         59.0         1.56         6.74         0.01         10.5           KMDD0198         79.3         80.4	KMDD0194	164.0	173.5	5.07	1.11	2.33	5.6
KMDD0194         187.2         188.3         0.63         0.21         2.69         0.1           KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         179.0         183.2         1.74         10.30         4.02         17.9           KMDD0196         185.0         193.6         3.10         0.50         1.18         1.5           KMDD0196         222.0         227.0         1.79         6.42         0.01         11.5           KMDD0196         233.6         240.8         2.56         1.15         0.63         3.0           KMDD0198         57.0         59.0         1.56         6.74         0.01         10.5           KMDD0198         91.2         92.4	KMDD0194	177.5	180.0	1.41	1.51	0.62	2.1
KMDD0194         190.3         194.6         2.42         1.20         0.48         2.9           KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         179.0         183.2         1.74         10.30         4.02         17.9           KMDD0196         185.0         193.6         3.10         0.50         1.18         1.5           KMDD0196         222.0         227.0         1.79         6.42         0.01         11.5           KMDD0196         233.6         240.8         2.56         1.15         0.63         3.0           KMDD0198         57.0         59.0         1.56         6.74         0.01         10.5           KMDD0198         79.3         80.4         6.80         21.58         0.74         146.7           KMDD0198         107.4         116.0	KMDD0194	181.8	183.3	2.53	2.32	3.62	5.9
KMDD0194         205.0         206.4         0.77         0.08         1.09         0.1           KMDD0194         221.2         222.0         0.45         2.77         1.31         1.2           KMDD0194         230.6         232.0         0.77         2.04         1.06         1.6           KMDD0196         160.6         177.4         6.99         2.71         0.56         18.9           KMDD0196         179.0         183.2         1.74         10.30         4.02         17.9           KMDD0196         185.0         193.6         3.10         0.50         1.18         1.5           KMDD0196         222.0         227.0         1.79         6.42         0.01         11.5           KMDD0196         233.6         240.8         2.56         1.15         0.63         3.0           KMDD0198         57.0         59.0         1.56         6.74         0.01         10.5           KMDD0198         79.3         80.4         6.80         21.58         0.74         146.7           KMDD0198         107.4         116.0         7.05         3.07         0.68         21.7           KMDD0198         116.9         122.1	KMDD0194	187.2	188.3	0.63	0.21	2.69	0.1
KMDD0194       221.2       222.0       0.45       2.77       1.31       1.2         KMDD0194       230.6       232.0       0.77       2.04       1.06       1.6         KMDD0196       160.6       177.4       6.99       2.71       0.56       18.9         KMDD0196       179.0       183.2       1.74       10.30       4.02       17.9         KMDD0196       185.0       193.6       3.10       0.50       1.18       1.5         KMDD0196       222.0       227.0       1.79       6.42       0.01       11.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8	KMDD0194	190.3	194.6	2.42	1.20	0.48	2.9
KMDD0194       230.6       232.0       0.77       2.04       1.06       1.6         KMDD0196       160.6       177.4       6.99       2.71       0.56       18.9         KMDD0196       179.0       183.2       1.74       10.30       4.02       17.9         KMDD0196       185.0       193.6       3.10       0.50       1.18       1.5         KMDD0196       222.0       227.0       1.79       6.42       0.01       11.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0194	205.0	206.4	0.77	0.08	1.09	0.1
KMDD0196       160.6       177.4       6.99       2.71       0.56       18.9         KMDD0196       179.0       183.2       1.74       10.30       4.02       17.9         KMDD0196       185.0       193.6       3.10       0.50       1.18       1.5         KMDD0196       222.0       227.0       1.79       6.42       0.01       11.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0194	221.2	222.0	0.45	2.77	1.31	1.2
KMDD0196       179.0       183.2       1.74       10.30       4.02       17.9         KMDD0196       185.0       193.6       3.10       0.50       1.18       1.5         KMDD0196       222.0       227.0       1.79       6.42       0.01       11.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0194	230.6	232.0	0.77	2.04	1.06	1.6
KMDD0196       185.0       193.6       3.10       0.50       1.18       1.5         KMDD0196       222.0       227.0       1.79       6.42       0.01       11.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0196	160.6	177.4	6.99	2.71	0.56	18.9
KMDD0196       222.0       227.0       1.79       6.42       0.01       11.5         KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0196	179.0	183.2	1.74	10.30	4.02	17.9
KMDD0196       233.6       240.8       2.56       1.15       0.63       3.0         KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0196	185.0	193.6	3.10	0.50	1.18	1.5
KMDD0198       57.0       59.0       1.56       6.74       0.01       10.5         KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0196	222.0	227.0	1.79	6.42	0.01	11.5
KMDD0198       79.3       80.4       6.80       21.58       0.74       146.7         KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0196	233.6	240.8	2.56	1.15	0.63	3.0
KMDD0198       91.2       92.4       0.95       3.29       0.78       3.1         KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0198	57.0	59.0	1.56	6.74	0.01	10.5
KMDD0198       107.4       116.0       7.05       3.07       0.68       21.7         KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0198	79.3	80.4	6.80	21.58	0.74	146.7
KMDD0198       116.9       122.1       4.25       1.23       0.95       5.2         KMDD0200       11.8       13.0       0.82       1.04       0.01       0.9	KMDD0198	91.2	92.4	0.95	3.29	0.78	3.1
KMDD0200 11.8 13.0 0.82 1.04 0.01 0.9	KMDD0198	107.4	116.0	7.05	3.07	0.68	21.7
	KMDD0198	116.9	122.1	4.25	1.23	0.95	5.2
KMDD0200         83.0         83.3         0.22         4.25         3.41         0.9	KMDD0200	11.8	13.0	0.82	1.04	0.01	0.9
	KMDD0200	83.0	83.3	0.22	4.25	3.41	0.9

KMDD0200	100.6	105.8	3.50	5.41	1.02	18.9
KMDD0200	110.1	117.7	5.74	2.57	0.57	14.8
KMDD0200	118.8	122.3	2.53	2.19	1.40	5.5
KMDD0200	126.2	139.7	9.70	1.12	0.58	10.9
KMDD0202	150.6	153.0	1.21	0.46	0.39	0.6
KMDD0204	98.4	100.7	1.55	26.41	0.94	41.0
KMDD0204	104.0	104.5	0.32	2.04	1.13	0.7
KMDD0204	124.7	141.1	11.89	2.78	1.46	33.1
KMDD0206	125.7	128.7	1.86	1.57	0.22	2.9
KMDD0206	136.2	138.0	1.24	0.81	0.42	1.0
KMDD0206	159.9	165.8	3.98	3.18	1.02	12.7
KMDD0206A	161.5	167.3	3.97	3.45	1.42	13.7
KMDD0208	109.6	110.7	0.90	2.40	0.10	2.2
KMDD0208	140.4	143.4	2.00	2.01	0.28	4.0
KMDD0208	157.9	159.0	0.77	2.49	0.00	1.9
KMDD0212	172.0	177.0	2.18	4.57	0.08	9.9
KMDD0212	203.0	205.3	1.34	0.71	0.40	0.9
KMDD0212	208.0	219.1	7.02	10.25	0.54	71.9
KMDD0212A	208.3	221.0	8.00	8.78	0.29	70.2

# **APPENDIX 3: 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
"Composite"	Drill hole sampling data under geological control will often have variable sample lengths. Prior to grade interpolation this data is standardised to equal lengths known as compositing, with the process generating gold grades for that standard interval. Ideally the composite is of the dominant sample length eg 1m or may factor in the largest sample interval, if there is a large number of these sample lengths.
"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.
"dynamic search interpolation method"	A grade interpolation method which constantly rotates the search ellipse axes to each block within the block model relative to the orientation of the nearest triangle in the constraining mineral wireframe.
"EL"	Exploration Lease
"FA"	Fire Assay: an laboratory analytical technique mainly used for gold
"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
"Grade interpolation"	The spatial and mathematical process used to generate block grades between drillholes; can be used to extrapolate beyond limiting drillholes for modest distances.  The method uses composited data in conjunction with variogram models for block grade weighting and data search parameters to select the appropriate data.
"HGL"	Highlands Gold Limited
"HPL"	Highlands Pacific Limited
"ID" "inverse distance estimation"	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.  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.  It is a relatively unsophisticated grade interpolation method
"Inferred Resource"	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.
"Indicated Resource"	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.
"IRG" or "IRGC"	Intrusion Related Gold or Intrusion Related Gold Copper
"JORC"	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

	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. km² 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.
"Multiple Indicator	
Kriging (MIK)"	A relatively more sophisticated method of non-linear grade interpolation compared to Ordinary Kriging; often best suited to open pit gold deposits.
"Mineral Resource"	, , ,
	Ordinary Kriging; often best suited to open pit gold deposits.  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
"Mineral Resource"	Ordinary Kriging; often best suited to open pit gold deposits.  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.
"Mineral Resource"  "ME"	Ordinary Kriging; often best suited to open pit gold deposits.  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.  Mining Easements
"Me"  "ME"  "ML"	Ordinary Kriging; often best suited to open pit gold deposits.  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.  Mining Easements  Mining Lease
"Me" "ML" "MOA"	Ordinary Kriging; often best suited to open pit gold deposits.  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.  Mining Easements  Mining Lease  Memorandum of Agreement

"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.  The kriging estimates are controlled by the variogram parameters. The variogram model parameters are interpreted from the spatial distribution and value of the data
"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/m³	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.