CUBE
CONSULTING

INDEPENDENT TECHNICAL REPORT (NI 43-101)

KIPOI COPPER PROJECT
STAGE 2 DEFINITIVE FEASIBILITY STUDY
DEMOCRATIC REPUBLIC OF CONGO

22nd February 2013

Prepared For:

TIGER RESOURCES LIMITED

Perth, Western Australia
Cube Project: 2011_101

Principal Authors

Mark Zammit (Cube Consulting Pty Ltd)	BSc (Hons), MAIG (3843)
Quinton de Klerk (Cube Consulting Pty Ltd)	NHD, FAusIMM (210114)
Simon Dorling (CSA Global Pty Ltd)	MSc, PhD, MAIG (3103)
David Readett (Mworx Pty Ltd)	B.E., FAusIMM(CP) (106428)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

GLOSSARY OF ABBREVIATIONS AND TERMS

%	Percentage
2D	Two dimensional
3D	Three dimensional
A	Ampere
AC	Air Core Drilling
Ag	The chemical symbol for the element silver
Al	The chemical symbol for the element aluminium
ALS	ALS Chemex Pty Ltd, assay laboratory
ANC	Acid Neutralising Capacity
Anticline	A description of folding of rocks which has produced a convex shape
Arccon	Arccon Mining Services
Argillaceous	A group of fine grained sedimentary rocks, including clays, shales, mudstones, siltstones and marls
As	The chemical symbol for the element arsenic
Azurite	A mineral that is made up of copper, up to 55% Cu, with carbonate and water
B	The chemical symbol for the element boron
Ba	The chemical symbol for the element barium
BCM	Bank cubic metre, a measure of volume applied to unbroken rock
Be	The chemical symbol for the element beryllium
Bi	The chemical symbol for the element bismuth
BLEG	Bulk leach extractable gold
BOCO	Base of Complete Oxidation
Brecciated	Describes rock composed of broken angular fragments and generally indicating a fault plane
^{0}C	Degrees celsius
Ca	The chemical symbol for the element calcium
CAMI	Cadastre minier
CCD	Counter current decantation, part of tank leach circuit in ore processing
Cd	The chemical symbol for the element cadmium
cm	Centimetre
Co	The chemical symbol for the element cobalt

Conglomerate	A sedimentary rock made up of various sizes of rounded rock fragments, ranging from pebbles to boulders cemented together by a finer grained matrix
Cr	The chemical symbol for the element chromium
CRM	Certified reference material
CSA	CSA Global Pty Ltd.
CSL	Compacted soil layer
CV	Coefficient of variation, a normalised measure of dispersion of a probability function
Cu	The chemical symbol for the element copper
dB	Decibel
DBA	Database administrator
DC	Diamond core drilling
DFS	Definitive Feasibility Study
Disseminated	Mineralisation carrying fine particles, usually sulphides scattered throughout the rock
DRC	Democratic Republic of Congo
DMS	Dense Media Separation
dmt	dry metric tonnes
E	Easting coordinate
ECD	Environmental control dam
EIA	Environmental impact assessment
EMP	Environmental management plan
EIS	Environmental impact Study
EPCM	Engineering, procurement and construction management
Fe	The chemical symbol for the element iron
FEL	Front end loader
g	gram
g/cm^3	grams per cubic centimetre
g/L	grams per litre
Ga	The chemical symbol for the element gallium
GA	General Arrangment

GAC	Gangue acid consumption, gangue is the commercially worthless material associated with the commercially wanted ore
ha	Hectare (10,000m^2)
H_2SO_4	The chemical symbol for sulphuric acid
HCl	The chemical symbol for hydrochloric acid
$HClO_4$	The chemical symbol for perchloric acid
HDPE	High density polyethylene, strong plastic used to line tailings dams
HF	The chemical symbol for hydrofluoric acid
Hg	The chemical symbol for the element mercury
HL	Heap Leach
HMS	Heavy media separation
HNO_3	The chemical symbol for nitric acid
Hz	Hertz
ICP	Inductively coupled plasma, analytical technique
IDS	Inverse distance squared, technique used in mineral resource estimation
IRR	Internal rate of return
JORC	An acronym for Joint Ore Reserve Committee which administers the JORC Code, the Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC sets the regulatory enforceable standards for the Code of Practice for Public Reports to the Australian Stock Exchange. The Code is endorsed by the Minerals Council of Australia, the Australasian Institute of Mining and Metallurgy, and the Australian Institute of Geoscientists.
K	The chemical symbol for the element potassium
kg	Kilogram
kg/h	Kilogram per hour
kg/m^2	Kilogram per square metre
kg/m^3	Kilogram per cubic metre
kg/t	Kilogram per tonne
kL	Kilo litre
km^2	Square kilometres
kms	Kilometres
kPa	Kilo pascal
Kt	Thousand tonnes

Kt/a	Kilotonnes per annum
kV	Kilo volts
kVA	Kilo volt ampere
kWh	Kilowatt hours
kWh/t	Kilowatt hours per tonne
L	Litre
La	The chemical symbol for the element Lanthanum
lb	Pound
L/s	litres per second
Lithology	General rock description based on hand specimen
LME	London metal exchange
LOM	Life of Mine
LUC	Localised uniform conditioning
m	Metre
m^2	Square metre
m^3	Cubic metre
M	Million
MARC	Maintenance and repair contract
Massive	A term used to describe a large occurrence of a pure mineral species, often with no structure
Mbcm	Million bank cubic metres
MCC	Motor control centre
ME-ICP41	Analytical method by ALS, inductively coupled plasma with partial aqua regia digestion
ME-OG62	Analytical method by ALS, inductively coupled plasma and atomic emission spectroscopy with total four acid digestion (for ore grade analysis)
Mg	The chemical symbol for the element magnesium
mg	Milligram
mg/L	Milligram per litre
mL	Millilitre
Mineralisation	The presence of minerals of possible economic value or the description of the process by which the concentration of valuable minerals occurs

Mintek	South Africa's national mineral research organisation
mm	Millimetre
Mn	The chemical symbol for the element manganese
MN	Magnetic north
Mo	The chemical symbol for the element molybdenum
MPA	Maximum potential acidity
MRE	Mineral resource estimate
Mt	Million tonnes
Mt/a	Million tonnes per annum
Mtpa	Million tonnes per annum
MW	Mega watts
MVA	Megavolt-ampere
N	Northing coordinate
Na	The chemical symbol for the element sodium
NAC	Net acid consumption
NAG	Net acid generation
NAPP	Net acid producing potential
Ni	The chemical symbol for the element nickel
NPV	Net present value
OFSF	Ore fines storage facility
OK	Ordinary Kriging
Ore	A natural aggregate of one or more minerals which, at a specified time and place, may be mined and sold at a profit or from which some part may be profitably separated
OS	Optimisation study
P	The chemical symbol for the element phosphorus
Pb	The chemical symbol for the element lead
PDC	Process design criteria
PE	Exploitation permit
PEA	Preliminary economic assessment
PFD	Process Flow Diagram

PFS	Pre-Feasibility Study
P&ID	Process and Instrumentation Diagram
PLC	Programmable Logic controller
PLS	Pregnant Leach Solution
Porphyry	An igneous rock with relatively large crystals set in a finer grained background mass
ppm	Parts per million
Protolith	Original lithology
QC	Quality control
QKNA	Quantitative kriging neighbourhood analysis
QRA	Qualitative Risk Assessment
RC	Reverse circulation drilling
Recovery	A measure in percentage terms in the efficiency of a process, usually metallurgical, in gathering the valuable minerals. The measure is made against the total amount of valuable mineral present in the ore
Reserve	The term for the economic quantities and grade of valuable materials as strictly applied in compliance with the definition in the National Instrument 43-101
Resource	The term for the estimate of the quantities and grade of valuable materials but with no economic considerations as strictly applied in compliance with the definition in the National Instrument 43-101
RL	Reduced level (same as elevation coordinate)
ROM	Run of Mine
S	South coordinate
S	The chemical symbol for the element sulphur
Sandstone	A sedimentary rock consisting of sand size grains, generally the mineral quartz, which is in a consolidated mass
Sb	The chemical symbol for the element antimony
Sc	The chemical symbol for the element scandium
SEK	SEK SPRL is jointly owned by Congo Minerals SPRL (60% interest) and Gecamines (40% interest)
Sericite	A mica mineral being a product of hydrothermal alteration
SG	Specifc gravity, in situ bulk density of rock material is a property of rock material used to calculate the mass of rock material by multiplying SG and volume

Silica	A compound of silicon and oxygen, generally occurring in the form of mineral called quartz
SMU	Selective mining u, the minimum likely volume for which ore and waste will be discriminated under the assumed open pit mining method
sq kms	Square kilometres
Sr	The chemical symbol for the element strontium
Stratiform	Describes a layered or tabular shaped body of mineralized rock and implies that the layering of the mineralization is parallel to the bedding planes of the sedimentary rock
Strings	A term used by SURPAC, applied to a line drawn within the program that outlines or describes a shape of an object or interpretation
Surpac	A proprietary computer program developed to model, view, analyse and report on geological and mining data
SXEW	Solvent extraction electrowinning, an ore processing technique
t	Tonne
t/a	tonnes per annum
t/d	tonnes per day
t/h	tonnes per hour
t/m^3	Tonnes per cubic metre
TSF	Tailings Storage facility
Th	The chemical symbol for the element thorium
Ti	The chemical symbol for the element titanium
TIGER	Tiger Resources Limited
Tl	The chemical symbol for the element thallium
TN	True north
TOF	Top of fresh rock
Tpa	Tonnes per annum
TSF	Tailings storage facility
Tuff	General term for rocks that consist of fine grained fragmental material thrown into the air by explosive volcanic activity
U	The chemical symbol for the element uranium
US$	Dollar (USA)
UTM	Universal Transverse Mercator geographic coordinate system
V	The chemical symbol for the element vanadium

V	Volt
V%	Volume percentage
W	The chemical symbol for the element tungsten
W	West coordinate
w/w	weight to weight
w/v	weight to volume
w%	weight percentage
WSF	Water storage facility
XRF	X-Ray Fluorescence analytical technique
XSTABL	Stability Assessment Computer Software
Zn	The chemical symbol for the element zinc
µm	Micron

DEFINITIONS

Mineral Resource

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material or natural solid fossilized organic material including base and precious metals, coal and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

The term Mineral Resource covers mineralisation and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase 'reasonable prospects for economic extraction' implies a judgement by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. A Mineral Resource is an inventory of mineralisation that under realistically assumed and justifiable technical and economic conditions might become economically extractable. These assumptions must be presented explicitly in both public and technical reports.

Inferred Mineral Resource

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.

Indicated Mineral Resource

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Mineralisation may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralisation. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

Measured Mineral Resource

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

Mineralisation or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade of the mineralisation can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

Mineral Reserve

Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

Mineral Reserves are those parts of Mineral Resources which, after the application of all mining factors, result in an estimated tonnage and grade which, in the opinion of the Qualified Person(s) making the estimates, is the basis of an economically viable project after taking account of all relevant processing, metallurgical, economic, marketing, legal, environment, socio-economic and government factors. Mineral Reserves are inclusive of diluting material that will be mined in conjunction with the Mineral Reserves and delivered to the treatment plant or equivalent facility. The term 'Mineral Reserve' need not necessarily signify that extraction facilities are in place or operative or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals.

Probable Mineral Reserve

A 'Probable Mineral Reserve' is the economically mineable part of an Indicated, and in some circumstances a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

Proven Mineral Reserve

A 'Proven Mineral Reserve' is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

Application of the Proven Mineral reserve category implies that the Qualified Person has the highest degree of confidence in the estimate with the consequent expectation in the minds of the readers of the report. The term should be restricted to that part of the deposit where production planning is taking place and for which any variation in the estimate would not significantly affect potential economic viability.

Feasibility Study

A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of realistically assumed mining, processing, metallurgical, economic, marketing, legal, environmental, social and governmental considerations together with any other relevant operational factors and detailed financial analysis, that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The confidence level of the study will be higher than that of a Pre-Feasibility Study.

Preliminary Feasibility Study

A Preliminary Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established, and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on mining, processing, metallurgical, economic, marketing, legal, environmental, social and governmental considerations and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be classified as a Mineral Reserve.

1.0 SUMMARY

Cube Consulting Pty Ltd (Cube) has prepared this Independent Technical Report for Tiger Resources Limited ("TIGER") in respect of the Kipoi Copper Project located in the Central African Copperbelt of the DRC the Democratic Republic of the Congo ("DRC"). This report provides support to:

- Definitive Feasibility Study ("DFS") compiled by Arccon Mining Services ("Arccon") for the Stage 2 processing of copper ore by a Solvent Extraction Electrowinning plant ("SXEW"), and
- Updates of the Kipoi Central, Kipoi North and Kileba Mineral Resource estimates.

TIGER has previously reported a Preliminary Economic Assessment (PEA) for the Stage 2 processing of copper ore by SXEW in November 2011 in accordance with the CIM guidelines (CIM 2005) and National Instrument NI 43-101.

TIGER has previously reported Mineral Resource estimates for Kipoi Central, Kipoi North and Kileba being deposits in the Kipoi Copper Project in accordance with the CIM guidelines (CIM 2005) and National Instrument NI 43-101.

The principal deposit for the project is Kipoi Central, which contains a zone of high-grade copper mineralisation within a larger lower grade resource envelope. The majority of the high grade copper mineralisation at Kipoi Central (> 3.25% Cu) is being mined and processed as part of the Kipoi Copper Project Stage 1 as outlined previously in a Feasibility Study ("FS") and optimisation study in CSA 43-101 Technical Reports dated October 2008 and May 2009 respectively.

The DFS was prepared by engineering consultants Arccon, incorporating input from other specialist consultants, Cube Consulting Pty Ltd (Geology, Resources and Reserves), Worley Parsons Pty Ltd (Geotechnical, Tailings Dam, water dam and site hydrology) and DRC Green Mining and Engineering (Environmental and Sustainable development planning). Additional independent consultants with input into the DFS include Coffey Geosciences Pty Ltd, CSA Global Pty Ltd, Amdel Limited, Ammtec Limited and Macquarie Bank Corporate provided financial modeling services.

1.1 Property Location

The Kipoi Copper Project is located 85km north north-west of Lubumbashi, the provincial capital of Katanga Province in the Democratic Republic of the Congo (Figure 1-1).

Figure 1-1 Location of Kipoi Copper Project

1.2 Project Ownership

The Kipoi Copper Project area is contained within Exploitation Permit (PE) PE533 and PEs 11383 to 11387 for a total area of 55km^2. The minerals rights to these areas are held by and registered in the name of SEK SPRL. SEK SPRL is jointly owned by Congo Minerals SPRL (60% interest) and Gecamines (40% interest). Tiger Congo SPRL, wholly owned by TIGER, owns 100% of Congo Minerals SPRL.

Cube has not independently investigated the tenement status of the Kipoi Copper Project and has sourced this information directly from TIGER corporate management.

1.3 Project Geology

The Kipoi Copper Project is located in the central part of the Neo-Proterozoic Central African Copperbelt, in the Katanga Province of the DRC. The Copperbelt constitutes a metallogenic province that contains some of the world's richest deposits of copper and cobalt.

Both, the Congolese and Zambian parts of the Copperbelt, form a continuous fold belt known as the Lufilian Arc, which is one of several Pan-African fold belts that fringe the Congo and Kalahari Cratons. The Lufilian Arc is characterised by outcrops of the Neo-Proterozoic Roan Group sediments, which occur in a series of tight disjointed anticlines that are offset by faults and breccia bodies. Mega-fragments ("**écailles**") of Roan Group rocks can measure up to 10km in length, host the major deposits of the Katangan Copperbelt. The basal part of the succession being the Lower Roan Mines Group, is host to the major copper-cobalt deposits, including the mineralization at the Kipoi Copper Project.

The Kipoi Copper Project contains five known areas of copper and cobalt mineralization being, Kipoi Central, Kipoi North, Kaminafitwe, Kileba and Judeira, all hosted in deformed rocks of the Mwashya (R4) and Mines (R2) Series sediments of the Roan Group. The Roan sediments occur in the project area over a strike distance of about 12km.

The Kipoi Copper Project lithological succession has been mapped by Gecamines as being part of the Mwashya Sub-group (R4), the uppermost groups of the Roan sub-groups. These are in structurally overprinted unconformable contact with tillites or diamictites of the Nguba Group and discordantly underlain by talcous brecciated rocks of the lowermost Mines Sub-group (R1 and R2.1).

At Kipoi Central, the Mwashya sediments (R4) form part of a “fragment” embedded by breccias of possible diapiric origin of the Lower RAT Group (R1). The fragment is known to measure at least 900m in a northeast-southwest orientation (open to the southwest) and about 600m in a northwest-southeast orientation (open to the west). The host rocks consist of a steeply southeast dipping and northeast striking succession of dolomites and siltstones and volcaniclastic rocks. It is interpreted that deformation resulted in northeast striking and south southeast dipping reverse faults that offset the host rock succession and led to the formation of broad zones of brittle deformation and brecciation.

At Kipoi North, located about 1km north of Kipoi Central, rocks of the Lower R2 Series have been mapped in outcrop and trenches. Artisanal miners have exploited the cupriferous beds and established a small open pit. The open cut is oriented east-west, sub-parallel to strike of the rock units.

Kileba is located approximately 7km south-east of Kipoi Central. The mineralisation is divided into a north-western and a south-eastern segment, with artisanal workings extending intermittently over a distance of about 1.1km.

Judeira is located approximately 4.5km northwest of Kipoi Central. The prospect area is located on a regional north-west trending topographic ridge that includes the locations of Kipoi Central and Kileba. The area is geologically mapped as undifferentiated Roan Formation undeRLying younger Mwashya Formation (R4.1 and R4.2). The regional map suggests that the prospect area is located within the core of a northwest trending anticlinal structure or on the edge of a southwest tilted fold limb.

Kaminafitwe is located approximately 3.5km northeast of Kipoi Central and is defined by a few artisanal workings, covering an area of about 200m by 80m at the base of the northeast trending ridge.

Judeira and Kuminafitwe are advanced exploration prospects.

1.4 Mineralisation

As with most Congolese copper deposits, the economic wealth is in the secondary enrichment of copper through the oxidation of primary sulphides in the weathering zone of the regolith profile. This is the case at the Kipoi Copper Project where most of the mineralisation identified to date is secondary in nature.

At Kipoi Central, both secondary and primary mineralisation has been identified, with the bulk of the mineralisation hosted by weathered and unweathered carbonaceous dolomitic siltstones and dolomites of the upper R4 sediments. Observations from non-oxidised core, show that mineralisation commonly occurs in moderately south dipping, cross cutting and bedding parallel veins, in the matrix of crackle and mosaic breccias and in the matrix of rubble breccias of a tectonic origin. Veins in the primary zone contain chalcopyrite, bornite and pyrite mineralisation with quartz-calcite as the gangue minerals. However, these late stage veins are compositionally slightly different from the bedding-parallel disseminated or stratabound mineralisation which contain exclusively chalcopyrite.

The primary sulphide mineralisation at Kipoi Central has undergone oxidation with the copper being remobilised into joints, fractures and voids during oxidation. The main copper bearing minerals in the oxide zone are malachite with minor azurite, chalcocite, native copper and pseudomalachite (copper phosphate). Oxide mineralisation occurs partly as in situ replacement of stratabound sulphides, as coatings on bedding, cleavage and joint surfaces and as minor cavity infill mineralisation with strong enrichment of mineralisation observed near fault zones.

The origin and style of cobalt mineralisation is more difficult to interpret. Significant cobalt mineralisation is localised near the contact of the Upper R4 sediments and the tillite. It occurs in soft black talc rich material that ranges in thickness up to several tens of meters containing the cobalt bearing mineral heterogenite.

Mineralisation does not occur in the underlying, undifferentiated talcose brecciated (“**Breche Heterogene**”) rocks, however the overlying tillites show locally, copper oxide bearing clasts in a sandy matrix suggesting that copper mineralisation was eroded at the time of the tillite formation. Copper oxide mineralisation occurs in brittle fractures cross cutting the tillite, suggesting that a deformation event post-dated the deposition of tillites.

The documented observations suggest that primary copper mineralization at Kipoi Central is syn to epigenetic with regard to the host formations and largely structurally controlled.

The copper minerals identified to date at Kipoi North are predominately copper oxide mineral, stratabound and concentrated in the DStrat, RSF, and RSC rock units. In the DStrat, malachite occurs parallel to the thin laminated silty dolomite layers. In the RSF, mineralisation is pervasive throughout the slaty layers of the rock, while the mineralisation in the RSC is associated with the dolomitisation, dissolution vughs, veins and fractures that occur immediately above the contact with the RSF and extends, in places, several tens of meters into this unit. Sulphides occur below the base of oxidation.

At Judeira, copper mineralisation is supergene being mainly malachite and appears to be located within fractured, fine laminated, vuggy, possibly stromatolitic silty carbonates in the hanging wall contact of the pyroclastic rocks. The footwall to the mineralisation appears to terminate against the highly talcose pyroclastic rock. The location of mineralisation associated with the lithological contact suggests a structural component to the mineralisation.

In the northern part of Judeira, mineralisation occurs in strongly oxidised, leached and deformed dolomitic siltstones in proximity to the strongly sheared pyroclastic contact. The artisanal miners are exploiting a soft black talcose material believed to be cobalt mineralisation.

At Kileba primary copper sulphide mineralisation occurs in the siltstones underlying an evaporitic unit and immediately above the pyroclastic unit. Core observations indicate that copper sulphide mineralisation occurs as disseminated stratiform/stratabound bands and layers of mineralisation overprinted by brittle ductile shear fabric and a quartz-calcite-chalcopyrite filled matrix breccias. The mineralisation generally increases with the level of shearing. Minor vein-type and disseminated style of mineralisation is present in the footwall and hanging wall as minor and discrete deformation zones. At a prospect scale, mineralisation is interpreted to occur as steeply southwest dipping stratiform mineralisation, remobilised in part into a bedding parallel structurally controlled lode. The mineralised zone has an average true width of approximately 15m. From current artisanal workings, mineralisation occurs over a strike length of about 450m in a southeast direction and is open to the south, up and down dip.

At Kaminafitwe, copper oxide mineralisation is located in the ferruginous haematitic contact aureole surrounding the mafic intrusive rocks. The supergene copper mineralisation exploited by the artisanal miners occurs as highly ferruginous seams surrounding the intrusive material.

1.5 Exploration

TIGER has focused its exploration activities on testing the copper and cobalt mineralisation exposed on the five known mineral occurrences and on the definition of additional regional exploration targets within the Kipoi Copper Project area. Exploration activity undertaken to date includes channel sampling of known adits, trenches and exposures, regional soil sampling, geological mapping by CSA Consulting Pty Ltd on a 1:1000 scale over all the prospects, completion of a detailed helicopter magnetic and radiometric survey and AC, RC and DC drilling.

An initial exploration RC drilling program was completed at Judeira and Kileba in September 2006. DC drilling commenced at Kipoi Central in December 2006 and continued until late 2008.

During 2007 and 2008, RC and DC drilling was carried out at Kipoi North and Kileba with collar spacing being approximately 50m. This drilling resulted in the estimation of Inferred mineral resources for Kipoi North and Kileba. During this period, wide spaced DC, RC and AC drilling was undertaken at Judeira, with 10 RC holes completed over the main mineralised zone at Kaminafitwe. Various areas around the Kipoi Central and Kipoi North prospects were drilled with AC as part of exploration and sterilisation drilling programs during the same period.

Various exploration programs have been designed to define mineralisation in the Kipoi Copper Project area in 2011-2012. These programs include resource upgrade and expansion drilling at Kipoi Central, Kipoi North and Kileba, resource/exploration drilling at Kaminafitwe, Simba Hills and Kipoi South the last two of which are regional geochemical targets. Regional soil sampling is planned to cover the remainder of the Kipoi tenements.

1.6 Mineral Resource Estimates

TIGER has previously reported Mineral Resource estimates for three of the deposits in the Kipoi Copper Project in accordance with the CIM guidelines (CIM 2005) and National Instrument NI 43-101.

The Kipoi Central Mineral Resource estimate documented in this technical report is an update completed by Cube, of the estimate previously publically reported in the NI43-101 Technical Report dated November 2011. The Kipoi Central Mineral Resource estimate was depleted for mining as at 31st March 2012.

The Mineral Resource estimate for Kileba was updated by Cube in August 2012.

The Mineral Resource estimate for Kipoi North was updated by Cube in November 2012.

The details of these Mineral Resource estimates are reported in Section 14.0 of this report.

Table 1.4 tabulate the Kipoi Copper Project Mineral Resources above 0.5% Cu cut-offs available for the Stage 2 DFS and are subject to minor rounding errors.

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Measured	Oxide	2.0	4.5	91	0.2	4.6
	Transitional	0.5	4.5	20	0.1	0.3
	Sulphide	0.8	5.0	42	0.1	0.7
	Total	**3.3**	**4.6**	**153**	**0.2**	**5.6**
Indicated	Oxide	10.9	1.3	138	0.1	8.5
	Transitional	4.9	1.6	76	0.1	3.1
	Sulphide	4.7	2.4	113	0.1	2.9
	Total	**20.5**	**1.6**	**327**	**0.1**	**14.5**
Measured + Indicated	Oxide	12.9	1.8	229	0.1	13.1
	Transitional	5.4	1.9	96	0.1	3.4
	Sulphide	5.5	2.8	155	0.1	3.6
	Total	**23.8**	**2.0**	**479**	**0.1**	**20.1**
Inferred	Oxide	4.2	1.0	42	0.1	4.5
	Transitional	1.1	1.0	12	0.1	1.1
	Sulphide	2.6	1.1	28	0.1	3.5
	Total	**7.9**	**1.0**	**82**	**0.1**	**9.1**

Table 1.1 Total Kipoi Central Mineral Resource Tabulation > 0.5% Copper, April 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Indicated	Oxide	6.0	1.46	87.0	0.06	3.4
	Transitional	2.1	1.60	33.2	0.05	1.0
	Sulphide	0.5	1.43	8.0	0.04	0.2
	Total	**8.6**	**1.49**	**128.2**	**0.05**	**4.6**
Inferred	Oxide	0.7	0.81	6.1	0.04	0.3
	Transitional	0.5	0.78	3.6	0.04	0.2
	Sulphide	1.0	1.75	17.7	0.04	0.4
	Total	**2.2**	**1.23**	**27.4**	**0.04**	**0.9**

Table 1.2 Total Kileba Mineral Resource Tabulation > 0.5% Copper, August 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Indicated	Oxide	3.4	1.36	46.1	0.05	1.6
	Transitional	0.5	1.21	6.4	0.03	0.2
	Sulphide	0.1	1.05	1.0	0.04	0.0
	Total	**4.0**	**1.33**	**53.5**	**0.05**	**1.8**
Inferred	Oxide	0.4	1.20	4.1	0.04	0.2
	Transitional	0.4	1.06	3.9	0.03	0.1
	Sulphide	0.3	1.05	3.6	0.03	0.1
	Total	**1.1**	**1.10**	**11.6**	**0.03**	**0.4**

Table 1.3 Total Kipoi North Mineral Resource Tabulation > 0.5% Copper, November 2012

The Kipoi North and Kileba Mineral Resources Table 1.2 and Table 1.3 respectively were available for assessment in the Arccon Stage 2 DFS.

For Kipoi Central, only the Mineral Resource below the Stage 1 pit was available for assessment in the Arccon Stage 2 DFS.Table 1.1 tabulates the Kipoi Central Mineral Resource estimate above 0.5% Cu cut-off and **below the Stage 1 pit**. Table 1.4 is subject to minor rounding errors.

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Measured	Oxide	0.0	0.0	0	0.0	0.0
	Transitional	0.1	1.5	1	0.0	0.0
	Sulphide	0.1	2.4	3	0.1	0.1
	Total	**0.2**	**2.0**	**4**	**0.1**	**0.1**
Indicated	Oxide	10.0	1.2	124	0.1	6.3
	Transitional	4.8	1.5	73	0.1	3.0
	Sulphide	4.6	2.3	109	0.1	2.8
	Total	**19.4**	**1.6**	**306**	**0.1**	**12.1**
Measured + Indicated	Oxide	10.0	1.2	124	0.1	6.3
	Transitional	4.9	1.5	74	0.1	3.0
	Sulphide	4.7	2.3	112	0.1	2.9
	Total	**19.6**	**1.6**	**310**	**0.1**	**12.2**
Inferred	Oxide	4.2	1.0	42	0.1	4.5
	Transitional	1.1	1.0	12	0.1	1.1
	Sulphide	2.6	1.1	28	0.1	3.5
	Total	**7.9**	**1.0**	**82**	**0.1**	**9.1**

Table 1.4 Stage II Kipoi Central Mineral Resource Tabulation > 0.5% Copper, April 2012

1.7 Mining and Processing

Details of Stage 1 mining and processing of Kipoi Central, are reported in the CSA NI43-101 Technical Report dated October 2008. A further optimisation study for Stage 1 was reported in the CSA NI43-101 Technical Report dated May 2009. Stage 1 comprises the development of the Kipoi Central open cut mine, processing facility, material storage facility and associated infrastructure. The Stage 1 plant will treat 900,000Tpa of high grade Kipoi Central oxide and transition ores (+3.25% Cu) to produce approximately 117,800 tonnes of +25% copper concentrate by crushing, ore washing, gravity spirals and heavy media separation (HMS) over a period of just over three years. The Stage 1 HMS plant is in operation.

The mining of the Stage 1 Kipoi Central pit commenced in November 2010.

The Stage 1 plant is planned to be superseded by the Stage 2 Leach SX-EW plant, which will produce LME Grade A quality copper cathode directly at the mine-site, in mid-2014. The Stage 2 operations will be developed in three phases:

- Phase 1 is based on treating the HMS floats from the existing plant using a new heap leach. The SX/EW section for Phase 1 is designed for 25,000 tpa copper production. The filters and tank farm equipment are sized for 50,000 tpa copper production for future operation.
- Phase 2 is based on a crushing facility for ROM as well as an extra SX/EW train, to reach 50,000 tpa copper production.
- Phase 3 is based on additional equipment to treat HMS slimes using tank leach, CCDs and tailings storage.

The residues from the HMS plant, (containing approximately 4.8Mt at 2.8% Cu), provides the initial feedstock to Stage 2 operations such that the mining schedule does not need to recommence until 2016.

The proposed mining and production schedule compiled for the Stage 2 feasibility study is based on all Kipoi Copper Project Mineral Resources classified as Indicated or above levels of confidence.

Stage 2 open pit optimisation studies were undertaken on the three principal deposits, namely Kipoi Central, Kipoi North and Kileba. Based on the results of the optimisation studies, detailed practical pit designs were undertaken in line with the latest geotechnical wall design criteria and practical access ramp considerations. A summary of key parameters used in the open pit optimisation process is outlined in Table 1.5 below. Details of these input parameters are to be found in Section 15.3 of this report.

Copper Price	US$2.62/lb
Mining Costs	as per current mining contract (from 7.65 to 8.65 $/BCM)
Pit Slopes	30° to 33°
Metallurgical Recovery	Ranges from 70.6% fo Kipoi North Trans to 90.6% for Kipoi Central Oxides

Table 1.5 Input Parameters for Stage 2 Open Pit Optimisation Studies

Mining cost parameters were derived from the current operations at the Kipoi Copper Project. All primary mineralisation was assigned zero recovery for this study.

Table 1.6 below summarises the Kipoi Copper Project Mineral Reserves contained within the Stage 2 pit designs discussed above.

Classification	Unit	Total
Proven	BCM	7,067
	t	16,014
	Cu%	2.13
	Cu t	341
Probable	BCM	10,348,507
	t	21,928,265
	Cu%	1.40
	Cu t	307,659
Total	BCM	10,355,574
	t	21,944,279
	Cu%	1.40
	Cu t	308,001

Table 1.6 Mineral Reserves within the Stage 2 Pit Designs.

Economic open pit cut-off grades were calculated and ranged from at 0.34% copper for Kipoi Central Oxides to 1.2% copper for Kileba and Kipoi North transition material.

Stage 2 mining is scheduled to commence in the fourth year of Stage 2 operations, with sequential mining of Kileba and Kipoi Central phases 2a and 2b, followed by Kipoi North and the satellite pit at Kipoi Central. Mining operations are proposed to commence during 2016 with first ore feed from these pits to the Stage 2 plant during 2016.

The overall Production Schedule including the HMS residues and the mined ore is provided in Table 1.7.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Phase	**1**	**1 to 2**	**2 to 3**	**3**	**3**	**3**	**3**	**3**	**3**	
Feed Sources & Tonnes										
HMS Floats	867,915	732,085								**1,600,000**
HMS Fines				540,000	393,000					**933,000**
Medium Grade - HL		757,902	852,098							**1,610,000**
Medium Grade - AG			690,000							**690,000**
Kipoi ROM - HL			61,717	565,894	1,241,002	3,658,307	3,934,904	3,069,014	833,464	**13,364,302**
Kipoi ROM - AG			11,843	108,592	180,659	614,794	577,063	431,558	120,359	**2,044,868**
Kipoi North - HL								366,802	633,308	**1,000,110**
Kipoi North - AG								82,148	148,408	**230,556**
Kileba - HL			967,652	1,550,539	1,022,501	170,578				**3,711,270**
Kileba - AG			410,023	628,973	411,282	72,246				**1,522,524**
Heap Leach Feed, t	867,915	1,489,987	1,881,467	2,116,433	2,263,502	3,828,885	3,934,904	3,517,964	1,466,773	**21,367,830**
Agitated Leach Feed, t			1,111,866	1,277,566	984,940	687,039	577,063	513,706	268,768	**5,420,948**
Total Plant Feed, t	**867,915**	**1,489,987**	**2,993,333**	**3,393,999**	**3,248,442**	**4,515,924**	**4,511,967**	**4,031,670**	**1,735,541**	**26,788,778**
Cu Grade	3.00%	2.80%	1.90%	1.80%	1.90%	1.20%	1.20%	1.60%	1.70%	**1.66%**
Contained Copper, t	19,094	48,611	57,436	60,160	60,707	52,870	53,755	62,018	28,652	**443,303**
Copper Recovery	90%	90%	87%	83%	82%	85%	85%	83%	81%	**84.9%**
Recovered Copper, t	**17,185**	**43,750**	**50,010**	**49,992**	**49,852**	**45,103**	**45,960**	**51,570**	**23,107**	**376,529**

Table 1.7 Production Schedule

1.8 Conclusions and Recommendations

1.8.1 Mineral Resources

With respect to the Mineral Resources estimates for the Kipoi Copper Project, Cube has concluded that the geological interpretation for geology, weathering and mineralisation domains at Kipoi Central, Kipoi North and Kileba are adequate for the estimation of the Mineral Resources as defined.

The technical systems adopted by SEK at the Project for resource definition are considered by Cube to be to industry standard. These include:

- Drilling equipment and method;
- Geological logging and core sampling;
- Bulk density determinations;
- Use of certified standards and assay blanks as control samples in the sample stream to monitor QAQC trends, and
- Technical data and QAQC storage in an Access database.

SEK utilising rigorous drilling methods have mitigated the risks associated with core loss. Cube has examined the effects of core loss on sample grades in nearby holes and concluded that the risk of overestimating metal in high core loss areas is low.

Cube recommends that QAQC reports and reconcilaition be regularly updated for the Kipoi Copper Project to reflect the ongoing grade control. In addition, Cube recommends that umpire analyses commence at an independent assay laboratory on a routine basis.

1.8.2 Resource Development and Exploration

The biggest impact on the value of the Kipoi Copper Project is likely to be achieved through increasing the Mineral Resource base available as feed to the Kipoi Copper Project infrastructure, which potentially will increase the mine life and/or annual plant throughput.

Wide spaced RC drilling has been completed at Judeira to define the mineralised potential. SEK plans to define all significant mineralisation within the Kipoi Copper Project area and undertake sufficient drilling to raise the level of confidence in the Mineral Resources for conversion into Mineral Reserves.

Several geochemical anomalies on the Kipoi tenements will be targeted with RC drilling in 2013 and specific areas of interest across the tenement will be covered by soil sampling to complete the geochemical coverage of the prospective areas across the tenements.

SEK is actively pursuing opportunities to increase landholdings within economic haulage distance of the central processing facility at Kipoi Central.

There is potential to add resources to the Kipoi Copper Project from the 100%-owned Lupoto Copper Project, 25km from Kipoi Central, where a maiden Mineral Resource was recently declared for the Sase Central deposit.

1.8.3 Stage 2 DFS

The Kipoi Copper Project - Stage 2 Definitive Feasibility Study (DFS) was conducted by Arccon (WA) Pty Ltd (Arccon) for Société d'Exploitation de Kipoi SPRL (SEK). This study was conducted to determine the technical and economic feasibility of the Kipoi Stage 2 development. The DFS addressed the exploitation of Kipoi Central, Kipoi North and Kileba resources along with existing surface stockpiles. Metallurgical test work and modelling has shown that the optimal process for exploitation will be via the crushing and scrubbing of ore to allow for a separation into coarse and fine ore fractions. Coarse ore will be treated via heap leaching and the fines treated via agitated leaching. The recovered copper from both streams will be treated by a conventional solvent extraction – electrowinning (SX-EW) plant with a production capacity of 50,000tpa cathode copper.

SEK is currently mining and producing copper concentrate at the Kipoi site utilising an existing Heavy Media Separation (HMS) Plant. This operation is generating ore and residue stockpiles that will be utilised as initial feed streams for the hydrometallurgical facility.

The key parameters in the Kipoi Copper Project are:

- A Life-Of-Mine of 9 yrs with 26.7 Mt of ore at an average copper grade of 1.66% and a peak plant feed rate of 4.5 Mtpa, and,
- A phased development of copper production capacity up to 50,000 tpa.

The existing HMS plant is planned to generate several streams of different high grade Cu materials, namely

- A 1.6 Mt stockpile of HMS floats at a copper grade of 3.0%.
- A 0.9 Mt stockpile of HMS slimes at a copper grade of 3.0%.
- A 2.4 Mt medium grade stockpile of ore at a copper grade of 2.6%.

These HMS plant 'by-products' are suitable for hydrometallurgical processing and these will be processed in the first 3 years of the SXEW plant operations.

These plant feed sources set the hydrometallurgical plant design for the phased construction of the project. The project will be developed in three phases designed to allow for the majority of the project development to be funded by SEK cashflow.

Phase 1 - The HMS floats stockpile will be the initial feed to the first two cells of the Heap Leach (HL) and the initial 25,000tpa SXEW train.

Phase 2 – The crushing and scrubbing facility will be constructed to facilitate a feed of fresh ore, as well as the 2.4Mt medium grade ore stock pile. The second of the 25,000tpa SXEW trains will also be constructed, for a combined 50,000tpa SXEW capacity.

Phase 3 – Agitated tank leach/CCD component of the hydrometallurgical plant will be constructed along with the Tailings Storage Facility. The initial feed into this section of the plant will be the HMS slimes.

The Stage 2 DFS generated Capital and Operating cost estimates to an accuracy of -5% +15%.

The project construction schedule developed, was based on:

- Start of early engineering on 1st December 2012. Detailed engineering for some long lead items will start in the early engineering period.
- Target completion dates of:
- Phase 1 – Q1 2014
- Phase 2 – Q1 2015
- Phase 3 – Q1 2016

The schedule summary is shown Figure 1-2.

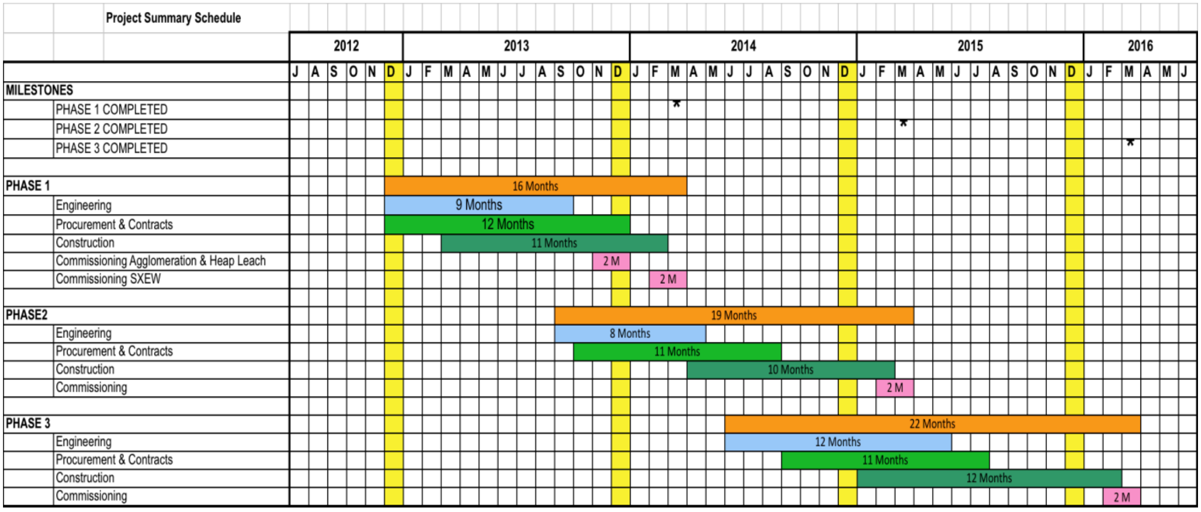

Figure 1-2 Summary Project Execution Plan

The DFS financial model was provided by Tiger Resources Limited. The model included outputs from the Metallurgical test work, Mine Production Schedule, Capital Cost Estimate and Operating Cost Estimate.

The copper prices used in the model are as published in the August 2012 Consensus Economics forecasts.

2014	2015	2016	2017	2018(Long Term)
$3.40	$3.40	$3.40	$3.40	3.00

Based on the base case inputs the project presents:

- Exploitation of the existing HMS stockpiles along with Kipoi Central, Kileba and Kipoi North orebodies (totalling 26.7Mt @ 1.66% Cu).
- A 9 year mine life at a maximum production rate of 4.5Mtpa producing at a maximum of 50,000tpa copper cathode.
- LOM production of 377 kt of copper at a recovery rate of 85% and acid consumption of 16kg/t.
- Capital cost to commencement of production of $161M with a total LOM capital of $383M

The average operating costs are summarised Table 1.8

Direct Opex* ($/lb)	Transport + Export costs ($/lb)	C1 ($/lb)	Depreciation Amortisation ($/lb)	Royalties ** ($/lb)	Total Cost C1+C2 ($/lb)
$1.13	**$0.26**	**$1.39**	**$0.46**	**$0.12**	**$1.98**

Table 1.8 Average Operating Costs

The Direct opex includes the direct costs of Mining, Processing and Administration. The modelling incorporates fiscal aspects of the DRC mining laws and conventions applicable to the Kipoi project, including:

- 30% DRC corporate tax rate
- 2% DRC state net smelter return royalty
- 3% import duties,
- 60% depreciation rate of capital expenditure (in year of occurrence and straight line thereafter)
- 2.5% Gecamines gross income royalty

A summary of the NPV (8%, $m), Free Cash Flow ($m) and IRR based on 100% of the Kipoi project (after tax and before financing structures) is provided in Table 1.9

Copper price	IRR	Net Free Cashflows	NPV (8%)	Payback (Initial Capital)
US$/lbCu	(%)	US$M	US$M	Months
Base Case	44	680	378	16
3.50	49	860	483	16
4.00	62	1,135	659	15

Table 1.9 Project Financial Model Outcomes

The above financial analysis excludes costs related to exploration, feasibility, financing and interest charges, no benefit has been attributed for the value remaining in the HMS project.

The biggest impact on the Kipoi project value is likely to be achieved through increasing the Mineral Resource base available as feed to the Kipoi infrastructure, which has the potential to increase the mine life and/or annual plant throughput. SEK is therefore committed to intensive exploration programmes.

SEK is actively pursuing opportunities to increase landholdings within economic haulage distance of the central processing facility at Kipoi.

Potential also exists to add to the Mineral Resource at the 100%-owned Lupoto Copper Project 25 km from Kipoi, where a maiden Mineral Resource was recently declared for the Sase Central deposit of 200,000t contained copper. During 2013 Sase Central will be assessed for its potential to deliver supplemental feed to a central processing facility.

2.0 INTRODUCTION

Cube Consulting Pty Ltd (Cube) has prepared this Independent Technical Report for Tiger Resources Limited ("TIGER") in respect of the Kipoi Copper Project located in the Central African Copperbelt of the Democratic Republic of the Congo ("DRC"). This report provides support to:

- Definitve Feasibility Study ("DFS") compiled by Arccon Mining Services ("Arccon") for the Stage 2 processing of copper ore by a Solvent Extraction Electrowinning plant ("SXEW"), and
- Update of the Kipoi Central, Kileba and Kipoi North Mineral Resource Estimates.

The summary of the Stage 2 DFS including the updates of the Kipoi Central, Kileba and Kipoi North Mineral Resource estimates, has resulted in the requirement for this "Technical Report" as defined by National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and conforms with the requirements of Form 43-101F1.

2.1 Sources of Information and Data

Mark Zammit from Cube provided information relating to the Mineral Resource for Kipoi Central, Kileba and Kipoi North. Simon Dorling from CSA Global provided information relating to the geology and mineralisation of the Kipoi Copper Project.

Information relating to the Stage 2 DFS has been based on the technical document; Kipoi Copper Project – Stage II Definitive Feasibility Study (Arccon, Dec 2012), prepared by engineering consultants Arccon Mining Services. This study was conducted to determine the technical and economic feasibility of the Kipoi Stage 2 development based on:

- Mining schedule – pit optimisations developed by Cube Consulting under the supervision of Quinton de Klerk
- Processing plant infrastructure – flow sheet design and major equipment selection and necessary infrastructure for processing Stage 1 residues and Stage 2 mined ore by Arccon Mining Services
- Heap Leach, Tailings Storage Facility and Water Storage Facility – design and costing by Worley Parsons Pty Ltd

TIGER/SEK provided all other data and information including property description, history, environmental, legal, contracts, operations, exploration and financial modeling/analysis.

Other technical reports and documents used in the preparation of this report are listed in Section 27.0 of this report.

2.2 Qualified Persons

The report authors and Qualified Persons are:

Mark Zammit

Mark Zammit from Cube has a BSc (Hons) degree from the University of Western Australia (1993) who and is a full member of the Australasian Institute of Geoscientists. Mr Mark Zammit is the independent qualified person responsible for the Mineral Resource estimate completed on the Kipoi Central deposit and documented within this technical report. He has visited the Kipoi Copper Project several times and most recently during February 2012 to review the controls on mineralisation and geological interpretation and review data collection.

Quinton de Klerk

Quinton de Klerk from Cube has a National Higher Diploma from the Technikon Witwatersrand (1993) and is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Quinton de Klerk is the independent qualified person responsible for the increase in in-situ Mineral Reserves estimate completed on the Kipoi Stage 2 project and documented within this technical report. He has visited the Kipoi Copper Project between 24th February 2012 and 3rd March 2012 to review the current mining operations and deposit sites associated with the Kipoi Stage 2 Project, including Kileba, Kipoi Central and Kipoi North.

Dr Simon Dorling

Dr Dorling from CSA Global, has a MSc from the University of Bonn/Germany (1991) and a PhD from the University of Western Australia (1995) and is a full member of the Australasian Institute of Geoscientists. Dr Simon Dorling is the independent qualified person responsible for the geology and geological interpretation for the Kipoi Copper Project on which the resource estimates are based, and the Mineral Resource estimate completed on the Kileba South deposit and documented within this technical report. He has visited the Kipoi Project area covered under the Kipoi licences most recently in May 2012 and numerous times prior to this between 2007 and 2011.

David Readett

David Readett, Principal Consultant with Mworx Pty Ltd has worked as a professional Metallurgical Engineer for more than 20 years since graduation from University. He has gained relevant experience working in the base metal, precious metals and coal industry on various projects throughout the world. He has visited the Kipoi Copper Project site between 11th July and 19th July 2011.

3.0 RELIANCE ON OTHER EXPERTS

Cube has based this technical report of the Kipoi Copper Project on information provided by TIGER. The data used by Cube includes third party technical reports and relevant published and unpublished third party information. Cube has made all reasonable endeavours, including site visits and review of the TIGER data, to confirm the authenticity and completeness of the technical data on which this report is based, however Cube cannot guarantee the authenticity or completeness of such third party information.

In connection with discussions regarding mineral tenure and related agreements, environmental liabilities, mining operations, political or other issues and factors relevant to the report that are not technical matters in Section 1.1, 1.2, 4.0, 5.1, 5.2, 5.3, 5.4, 5.7, 6.1, 6.2, 6.5, 19.0, 20.0, 23.0, 24.3 and 25.1.2. Cube has relied upon information received from TIGER corporate management. Cube has not independently investigated the tenement status of the project. Neither Cube, nor the authors of this report are qualified to provide comment on legal issues associated with the Kipoi Copper Project, including royalties and agreements, any other agreements, joint venture terms, environmental liabilities or the legal status of the tenements and for the purpose thereof have relied on the legal opinion dated 16 May 2011 of DRC counsel Hervé Ngoy- Kalumba Banza (ONA/0599) of HNK & Associates; 389, Avenue Kambove, C/Lubumbashi.

In connection with Exploration and Resource Development activities discussed in Sections 1.5, 1.8.2, 6.3, 9.0, 10.0, 11.0 and 26.1 Cube has relied upon reports and statements supplied by Frank F. Schmidt (Chief Exploration Geologist, SEK) and Dominique d. Petroons (Exploration Geologist, SEK).

In connection with the sections 1.7, 13.1, 16.1, 16.2, 17.0, 18.0, 21.0, 24.2, and 25.1.4, David Readett has relied on the the information supplied by Arccon (WA) Pty Ltd under the supervision of Paul Kreppold (General Manager, Arccon Mining Services).

In connection with the sections 19.0, 20.0 and 25.1.2 David Readett has relied on the the information supplied by TIGER corporate management.

Section 27.0 of this report details all documents used in the preparation of this report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Project Location

The Kipoi Central, Kipoi North and Kileba deposits are located 85km north north-west of Lubumbashi, the provincial capital of Katanga Province in the Democratic Republic of the Congo.

The Kipoi Copper Project is located at 11° 14' 50"S latitude and 27° 05' 40"E longitude.

Figure 4-1 Location of Kipoi Copper Project

4.2 Legal Tenure

The Kipoi Copper Project area (Figure 4-2) is covered by Exploitation Permit (PE) PE533 and PEs 11383 to 11387 for a total area of 55km^2. The minerals rights to these areas are held by and registered in the name of SEK. SEK is jointly owned by Congo Minerals SPRL (60% interest) and Gecamines (40% interest). Tiger Congo SPRL, wholly owned by Tiger Resources Ltd (TIGER), owns 100% of Congo Minerals SPRL.

PE's are renewed for fifteen years if the holder:

- Has not failed in duties as set out in the DRC Mining Code
- Has not exhausted the deposit
- Has approval of up to date EIS and EMMP
- Is continuing in good faith exploitation activities.

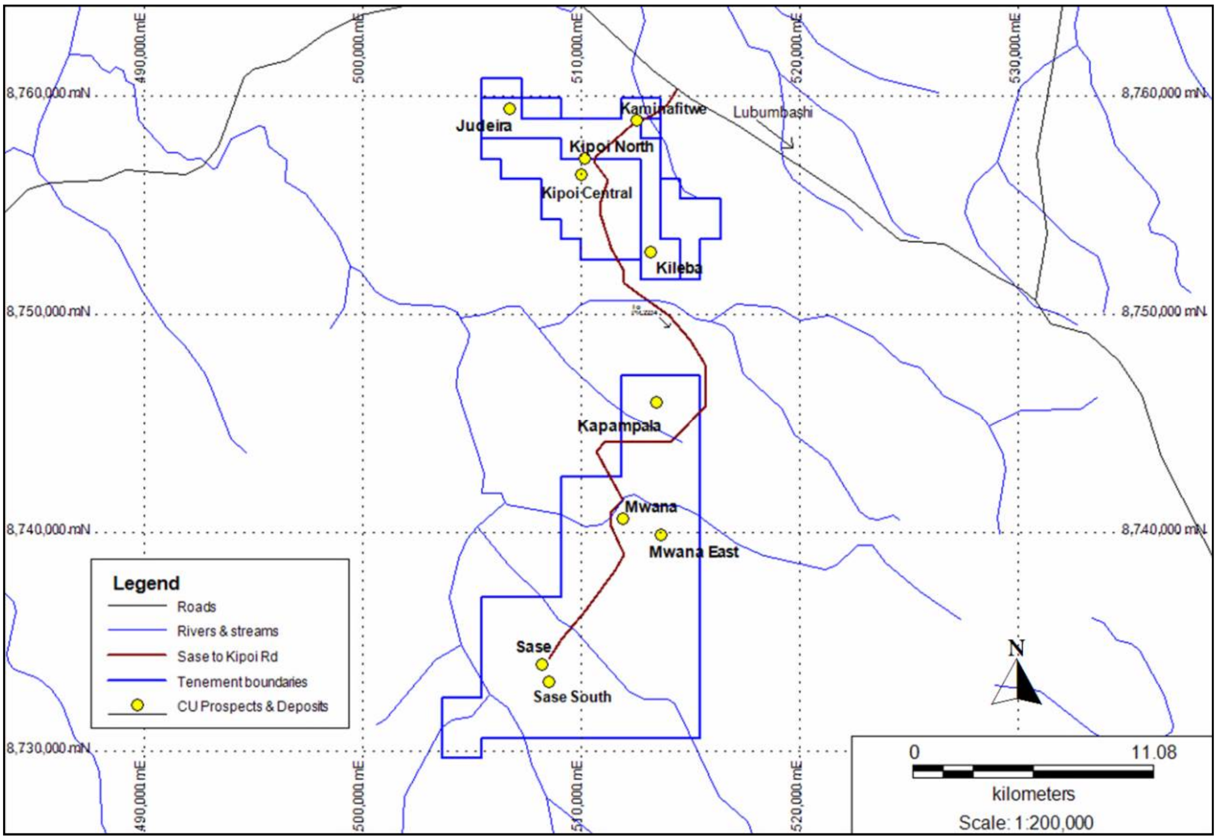

Figure 4-2 Tenement Plan of Kipoi Copper Project Area, including the Sase Project

Cube has not independently investigated the tenement status of the Kipoi Copper Project and has sourced this information directly from TIGER corporate management.

4.3 Royalties

The only known royalties, back-in rights, payments or other agreements and encumbrances pertaining to the Kipoi Copper Project is a royalty of 2.0% payable of net smelter return revenues from product sales to the Government of the DRC and a royalty of 2.5% of gross revenues from production payable to Gecamines. Gecamines also will earn US$35/t copper in Mineral Reserves above 200,000t copper in Mineral Reserves.

4.4 Environmental Liabilities and Permits

Decree no. 038/2003 of 26th March 2003 being the Mining Regulations requires that any mining right holder who applies for transformation of an Exploration Licence into an Permit for Exploitation or for renewal of its PE must be able to present in its environmental study a Sustainable Development Plan aimed at improving the economic, cultural and social well-being of the local populations affected by the project during and after the operation of the project, in accordance with article 452 of the Mining Regulations.

The operator must present:

- The mining company's commitments with respect to the local communities,
- The pecuniary and non-pecuniary compensatory measures and the terms and conditions thereof,
- The local development programs in various areas such as education, health, infrastructure, production and their operation, their cost, the mining or quarrying company's financial participation, the monitoring and follow-up measures and the participants (NGOs, local government, beneficiaries), and
- The schedule and cost of the sustainable development plan.

The implementation of an environmental management plan for the Kipoi project will be financed by the mining operator, with the help of a reserve for rehabilitation of the mining sites, which must be set up by the mining operator in accordance with article 258 of the Mining Code. On the basis of the total amount of the financial guarantee estimated at US$3,058,000, the annual amounts to be paid to establish such a reserve over the 15 year term of the Permit for Exploitation (cf article 410 of the Mining Regulations) are as follows (Table 4.1).

Year	Amount (US$)
Year 1	-
Year 2	-
Year 3	-
Year 4	24,464
Year 5	76,450
Year 6	125,378
Year 7	177,364
Year 8	226,292
Year 9	278,278
Year 10	327,206
Year 11	379,192
Year 12	431,178
Year 13	480,106
Year 14	532,092
TOTAL	3,058,000

Table 4.1 Budgeted Environmental Rehabilitation Works

4.5 Required Permits

The Kipoi project area is covered by Exploration Permits and the environmental permitting has been completed and all minor permits required to commence development have been acquired. The project is ready for operational development and is fully permitted.

The granting of an Exploitation Permit has, as a precondition, the approval of an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP), combined in a single document (the Environmental Study). The requirements of the Environmental Study are defined in detail in the mining code and regulations of the Congolese Government.

The requirements specify compliance with:

- IFC Performance Standards, with DRC compliance standards set as the minimum target for all performance standards,
- Equator Principles, and
- World Bank guidelines.

The compliance requirements ensure that the project is undertaken ‘in a manner that is socially responsible and reflects sound environmental management practices’.

An Environmental Study has been prepared by SEK and approved on the 28th June 2012 to formalise the existing Operating Permit and has been lodged with the standing committee charged with the evaluation of Environmental Studies. Green-EMEC has been engaged to update and finalise the Environmental Study to meet the requirements of the standing committee.

A EIE/ PGEP (the English translation being Environmental Impact Assessment and Environmental Management Plan) was prepared, submitted and subsequently approved in Q3 2012 This Environmental Impact Assessment and Environmental Management Plan (EIE/PGEP) for the revised project included:

- Compliance with the EIA Directive in the preparation of the EIE/PGEP
- A presentation of the project;
- An analysis of the environment affected by the project;
- An analysis of the impacts of operations on the environment;
- A proposed program of mitigation and rehabilitation;
- A detailed budget and financial plan for the Environmental Management Plan including measures for mitigation and rehabilitation
- Establishment of the necessary financial security required for the environment;
- A report on the public consultation process undertaken during the preparation of the EIE/PGEP and planning of a sustainable development programme.
- Certification of compliance.
- Some of the key aspects of the EIE/PGPE submission were:
- SEK holds mining exploitation permits recorded in the DRC Mining Registry, as PEs 11383, 11384, 11385, 11386, 11387 and 533.
- No villages are located in the licenced area.
- The licence area of SEK is not crossed by any permanent rivers,
- Mitigation measures provided to avoid contamination of local water, ground and surface, soil, vegetation and air.
- Mitigation measures provided to avoid land degradation is discussed with measures to reduce the impact of erosions and structural changes.
- Project OHS&E plan provided. Plan of Sustainable Development provided; which is already in place as part of the existing Kipoi Stage I Operations.
- Decommissioning and Rehabilitation Plan.
- Environmental bond value will be USD $3,058,000.
- The EIE/PGEP has been approved demonstating the standard of the submission and the willingness of government to support the ongoing operation at Kipoi.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE & PHYSIOGRAPHY

5.1 Project Access

The Kipoi Copper Project is accessed via a 6km road, which branches off the bitumen sealed Lubumbashi to Likasi national highway. Lubumbashi, situated 85km to the southeast of the Kipoi Central, has an international airport with good commercial links to Johannesburg.

5.2 Physiography and Climate

The Kipoi Copper Project is situated on the Central African Plateau, on gently undulating topography at an elevation of 1,200m above mean sea level. Vegetation in the project area generally consists of Riparian and Mingu (Acacia) vegetation though certain small areas have been cleared for cultivation and charcoal burning.

The area has a distinct dry and wet season, with the wet season commencing in October and generally finishing in April. The average rainfall in the project area is approximately 1,100 mm, though this can range from 650mm to 1,500mm with 90% of the rainfall occurring during the wet season. Geological fieldwork can be undertaken throughout the year.

Temperatures are generally mild and vary between 17ºC and 26ºC, but can fall as low as 12ºC during the night in July and August.

5.3 Local Infrastructure and Services

The Kipoi Copper Project is accessible from Lubumbashi, the second largest city in the DRC and the centre for the significant mining activity currently undertaken in the Katanga province. Manufacturing and engineering support services are available from Lubumbashi.

The nearest major population centre is the Provincial Capital of the Katanga Province, Lubumbashi. There is only one local village between the Kipoi Copper Project and the highway; the village of Kangambwa, which has an estimated population of 375 and is be a source of local labour.

5.4 Surface Rights

The PE provides for the rights to exploit the natural resources including use of timber, gravels and available materials for construction within the permit area. Compensation must be made for any loss of crops or other commercial activities. Land compensation is covered under the permitting fees. All surface rights required to commence development and operations have been acquired.

5.5 Sources of Power

Power for Stage 1 is currently provided by on site generators, with the operation serviced by a small power station of approximately 2.4kW, while permitting and installation of a grid power supply via a 5MVA substation will be effected for the exsiting operation. The mini-substation is expected to be available from the end of the first year of operations.

SEK is currently investigating options to connect to the grid supply and take advantage of the comparatively cheaper grid power supply costs. SNEL has indicated that, should SEK agree to refurbish the nearby Shilantembu Substation (27 km away from the existing site, this study includes the cost of this refurbishment), then they would be able to supply the required 25MVA to site via installation of a dedicated power line. Allowance has been made for the MV incoming connection that will allow for a future grid connection in Phase 2.

SEK have had discussion with Megatron and are establishing an MOU to allow for future Grid power supply from a refurbished hydroelectric generator at the Inga Power Station. This power would be transferred via the HVDC connection between the TRO and TRS grids. This would guarantee sufficient power and continuity of power for the Phase 2 and Phase 3 of the project.

However due to ongoing concerns with the stability of the grid and potential ongoing downtime required for maintenance allowance has been made to ensure full diesel generation capacity is retained on site. Allowance has been made for 90% availability of grid power so the diesel power will provide 10% of the average annual power demand from 2015 onward. The first year will see a combination of grid power and diesel supply to meet the electrical requirements.

It is expected that the grid power from Inga will be available by early 2015, consistent with commissioning of Phase 2. Preliminary pricing for the Megatron power is 0.9-0.12$/kWhr and for operating cost estimates and financial modelling 0.12$/kWhr has been utilised.

5.5.1 Diesel Generation Bank

The required power consumption (approximately 18.3 MVA running load, 26.7MVA connected load) can be met by ten generator units in operation and with a minimum of two engines on standby duty or off load for maintenance purposes. Each generator unit has a rated capacity of 1.8MW continuous power. The system will be complete with fuel handling, lubrication, air handling, exhaust system, starting equipment, synchronizing equipment, electrical distribution switchgear, noise suppression and other auxiliary equipment

Fuel to the generators will be provided by dedicated fuel supply and storage system with sufficient storage capacity to allow for two weeks continuous load under full Plant loading conditions.

The DFS allows for a BOO system of operation where SEK will enter into an agreement with an independent power provider who will operate its own equipments and charge SEK a rate per kWh.

The diesel generator bank specifications are provided below:

Voltage	11kV
Electrical active power / unit	1.8MW
Number of operating units	10
Total number of installed units	12
Connected Load	26.7 MVA / 21.6 MW
Rated power factor	0.8 lagging
Main electrical loads	Rectifiers + Electrical Motors
Operating hours	24 hours/day; 365 days/year
Fuel Storage	1 × 60,000 litre bulk storage tank Grid Supply (future)

The supply of the units will be matched to the power requirements for each Phase, such that Phase 1 there will be 6 units, Phase 2, 10 units and Phase 3 12 units.

5.6 Sources of Water

Worley Parsons conducted an independent site water balance for the DFS. The water balance was also checked and validated against the MetSim steady state mass balance utilised by Arccon to establish the overall process plant mass balance and design criteria inputs.

A majority of the process water for the plant site can be supplied from rainfall runoff from the surface of the facility. Raw water and additional makeup water will be sourced from other available water supplies.

The water balance model and flow diagram for the site is shown in

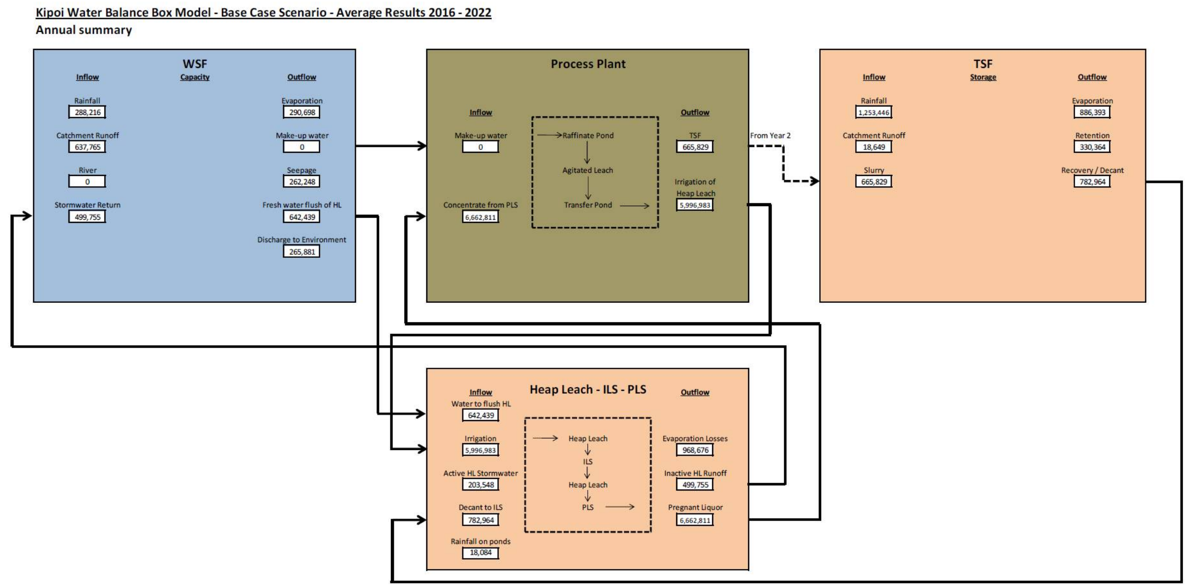

Figure 7-3: Average annual base case scenario results from 2016 – 2022

Figure 5-1 Kipoi Copper Project Conceptual Site Flow Diagram

The model predicts that for the range of conceivable scenarios the Project is expected to either be in water surplus or at least have sufficient water over the LOM, without the need for additional makeup water from other sources after the initial start- up period in mid- 2014. Runoff from undisturbed catchments that report to the WSF and stormwater runoff from the heap leach dominate the water balance and are the main reason that the Project is likely to be in water surplus.

The results of running the water balance model under various weather scenarios predict that water can be managed to meet the demands of the Project under most plausible weather conditions without the need for make- up water supplies from other sources. However it is still recommended that infrastructure for delivering make- up water is installed to provide water for the first dry season when the WSF is likely to be low on water and to provide a backup option in the event that TSF water levels are too low to provide decant water to the ILS, or in the event of a decant system breakdown.

The model predicts that there will be considerable excess water from the WSF, which must be discharged to the environment.

The capacity of the WSF and the TSF are expected to be adequate based on the results of the water balance modelling. The WSF receives enough direct rainfall and runoff to fill the storage to capacity each wet season for most weather scenarios modelled. The capacity of the TSF will increase over the LOM as the Stage 2 embankment is constructed.

Once plant operations have stabilised and a return of decant water from the tailings storage facility is established the steady state requirement for raw water at the plant site is estimated to be a maximum of 172m³/h.

To ensure sufficient water is available for operations, the existing process water supply from the Sofwango River, about 7km from the new Process Plant, will be utilised. This has a capacity of apprpoximately 120m^3/hr.

Mine development will also require the development of dewatering bores. These will provide an additional source of process water.

5.7 Mining Personnel

5.7.1 Organisation Structure

During operations many of the project's administrative and general management functions will be carried out by staff at the Lubumbashi office. The Lubumbashi office provides better access to government offices, local raw material and consumable suppliers and transport and logistics contractors. Liaison with government agencies, payroll, accounts payable, copper sales and many other functions will be managed at Lubumbashi with site personnel providing a data input and paperwork collection function. This will serve to reduce site accommodation requirements and/or numbers of personnel commuting on a daily basis.

5.7.2 Expatriate Staff

Expatriate staff will fill a limited number of key positions in the operation. At this stage it is anticipated that these will include:

- Director General
- Finance Director
- Cost Controller
- Mine manager
- Mine geologist
- Mine superintendent
- Mine maintenance supervisor
- Production manager
- Plant superintendent
- Plant metallurgist
- Engineering superintendent
- Logistics superintendent
- HSE manager

In addition it is anticipated that the power station contractor will have a senior expatriate supervisor as part of their complement.

There will be a requirement for a number of training officers during commissioning of both the mining fleet and process plant. The training of plant operations personnel has been allowed for in the pre-production capital allowances. All contractors will be responsible for providing training for their employees to a standard acceptable to SEK.

Recruitment will target experienced expatriate staff with a demonstrated ability to handle the cultural issues inherent with an operation of this type and with a proven ability and willingness to develop local staff. An ability to speak French will be well regarded in all candidates for expatriate positions.

5.7.3 Congolese Staff

The Katanga province of the DRC has a long history of industrial scale mining activity. Operators, tradesmen and middle management personnel familiar with the types of equipment and processes to be employed at Kipoi are available in the area, although specific skills will need further development.

It is SEK's intent to provide salary and benefits packages commensurate with building the best available, competent, Congolese team without setting undue precedents within the industry.

Notwithstanding the aim of always employing the 'right candidate for the job', candidates for operating positions to provide maximum opportunities for residents of local communities. The candidates will be ranked according to:

- Existing employment with the company
- Residents of nearby villages
- Residents of other centres in Katanga province
- Other Congolese nationals

in order to provide maximum opportunities for residents of local communities.

5.8 Storage Areas and Waste Disposal

The Heap Leach and Tailings Storage Facility for the DFS were designed by Worley Parsons.

The site selected for the TSF and HL Figure 5-2 was derived in conjunction with other consultancy parties of the DFS after an assessment of potential sites and a number of considerations including topographic and cultural features within the current Mining Lease boundaries, construction costs, proximity to blast zone and impact on existing infrastructure.

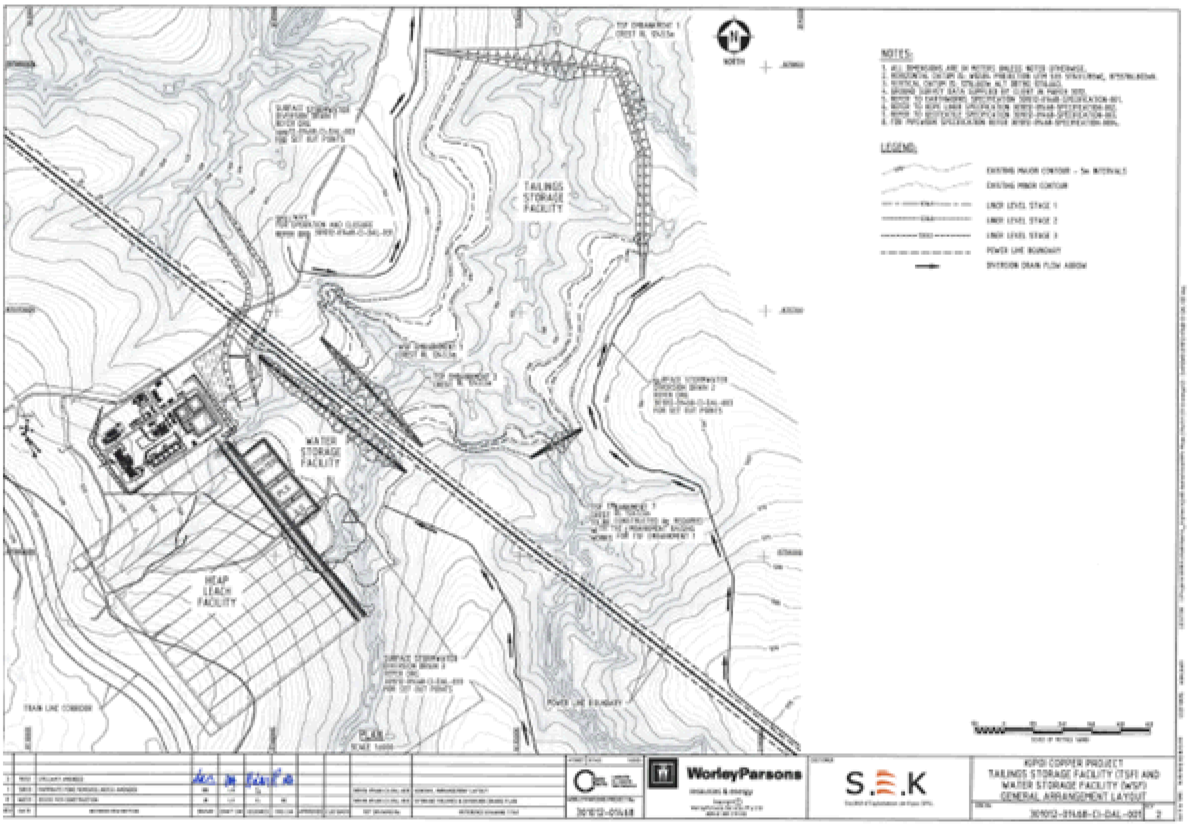

Figure 5-2 General Project Site Layout

The proposed TSF location is large enough to meet the 10 year project life. Based on the topography of the site, a valley storage TSF has been utilised with a main embankment across the valley approximately 1.8 kms northeast of the process plant. The WSF is contained within the same valley as the TSF with the WSF embankment dividing the TSF and WSF. The WSF has been designed to store approximately 1.3 Mm3 of water.

The proposed HL is located within close proximity to the proposed Crusher location to minimise conveyor lengths. The site is on a gently sloping topography (1 – 5%) to meet leaching drainage requirements with minimal construction work.

The base surface area of both facilities is minimised to limit the impact on flora and fauna. The selected site for the TSF is close to the process plant, as a result the risk to the environment posed by accidental tailings spills from pipeline leaks or ruptures is also minimised. In addition, the HL is located close to the Crusher to minimise the distance a conveyor must traverse to the Heap, and therefore minimise costs and potential impact on the environment. A project risk assessment has been performed for the proposed layout on 26 March 2012.

The annualised details for the tailings production, commencing in Year 3, and agglomerated ore to be stacked on the HL, commencing in Year 1, are presented in the following tables Table 5.1 and Table 5.2.

Project Year	Solids (tpa)	Design Insitu Dry Density (t/m3)	Settled Volume (m^3pa)	Cumulative Volume (m^3)
3	996,799	1.25	797,439	797,439
4	1,215,819	1.25	972,655	1,770,094
5	1,059,318	1.25	847,455	2,617,549
6	709,824	1.25	567,860	3,185,409
7	608,500	1.25	486,800	3,672,209
8	491,465	1.25	393,172	4,065,381
9	269,654	1.25	215,723	4,281,104
10	117,749	1.25	94,199	4,375,303
Total	**5,469,129**		**4,375,303**	

Table 5.1 Annualised Tailings Production

Project Year	Ore Stacked (tpa)	Insitu Dry Density (t/m3)	Stack Volume (m3pa)	Cumulative Volume (m3)
1	937,500	1.60	585,938	585,938
2	1,577,500	1.60	985,937	1,571,875
3	1,438,503	1.60	899,065	2,470,939
4	1,878,447	1.60	1,174,030	3,644,969
5	2,404,167	1.60	1,502,604	5,147,573
6	3,321,543	1.60	2,075,964	7,223,537
7	3,841,352	1.60	2,400,845	9,624,382
8	3,774,169	1.60	2,358,856	11,983,238
9	1,617,455	1.60	1,010,910	12,994,148
10	495,046	1.60	309,404	13,303,551
Total	**21,285,682**		**13,303,551**	

Table 5.2 Annualised Agglomerated Ore to HL Stacking Operation

The design of the TSF has been aimed at:

- Optimising the re-use of surface water;
- Optimising tailings storage capacity;
- Minimising environmental impact;
- Minimising economic impact;
- Minimising impact on existing infrastructure;
- Minimising the impact on the native vegetation;

- Minimising the impact on the local community; and
- Minimising the potential for seepage through the floor of the TSF and WSF.

The following considerations have been incorporated into the TSF design:

- The TSF has been designed based on the production of 9.45 Mt at 53% solids, with a storage life of 9 years. (The TSF does not need to be operational in Year 1 of this 10 year project.);
- After the removal of the topsoil the insitu material forming the floor of the TSF will be roller compacted to reduce potential seepage losses prior to covering with a geotextile and HDPE liner;
- The TSF floor will comprise a HDPE liner to reduce potential seepage losses. The HDPE liner will be placed over geotextile to prevent damage to the liner from the insitu material below.
- The TSF embankments will be constructed in three (3) stages utilising mine waste from the pit cutback and downstream construction methods;
- The TSF embankments will comprise a roller compacted clayey upstream zone placed against a traffic compacted mine waste downstream zone;
- The upstream embankments of the TSF will comprise a HDPE liner over geotextile to reduce potential seepage losses. The HDPE liner will be placed over geotextile to prevent damage to the liner from the material below the liner;
- A seepage cut-off into the underlying shale is incorporated into the TSF embankment design in order to reduce the potential for seepage flows under the TSF embankments;
- Tailings in the form of a slurry will be discharged subaerially from the main embankment of the TSF;
- A pump mounted on a floating pontoon will be deployed to recover supernatant solution for reuse in the process plant; and

The design of the HL has been aimed at:

- Optimising the storage volume and surface area;
- Reducing environmental impact;
- Minimising economic impact;
- Minimising impact on existing infrastructure;
- Minimising the impact on the native vegetation;
- Minimising the impact on the local community; and
- Minimising the potential for seepage through the floor.

The HL design was based on the following criteria supplied by the client:

- Storage capacity with a total production of 26.55 Mt of agglomerated ore to be stacked. The maximum rate of stacking will be 3,150,000 tpa. Moisture content of the stacked agglomerated ore is 8% and the project life is 10 years. The design insitu dry density is 1.60 t/m3;
- HL to be constructed in cells of approximately 90 days;
- Initial stack height 6 m;
- Maximum length of cells in the current design, which includes allowances for various clearances is 715m;
- Base width of cells is 75m as per the requirements for the slewing stacker;
- HL facility to be lined with HDPE and drainage collected in each cell by a HDPE Pipe linking to a half herringbone system. The HDPE pipe will drain to the base of the facility where the drainage from each cell runs into 'W-drains' which deliver the solution to the Pregnant Liquor Solution (PLS) Pond;
- The requirements for the W-drains at the northern end at the base of the HL are as follows:
    - A 10m wide zone for clearing any slumps around the stack with a small stormwater collection drain, followed by a windrow (HDPE liner extends from the HL to the windrow);

  - A 10 m wide road including approximately 2.5 m to allow two 800 mm pipes, followed by a windrow;
  - Stormwater/Intermediate Liquor Solution (ILS) drain with HDPE liner delivering to the ILS Pond;
  - HDPE liner extends over an elevated area of 3 m width for two 800 mm diameter pipes; and
  - HDPE liner extends across the PLS drain which is sized on peak flow of 300 L/s (HDPE Pipes from the active HL Pad will pass over the W-drains and deliver the solution to the PLS drain).

- Drainage must be orientated such that the HL can drain to the Ponds with minimal construction work;
- Individual lift height of each stack to be 6 m.

The HL has capacity for six lifts reaching a maximum height of 36 m over a HL pad area of approximately 66 ha. Only four lifts will be required for the current design parameters. The HL design has capacity for future production, if required.

Each lift will comprise an independent HDPE liner and semi-herringbone leachate collection system. The base lift consists of 12 cells each with a minimum cell base width of 75 m and cell length of 715 m. The cells at the extremity of the HL Pad (Cells 1 and 12) have a base width of 85 m.

The base layer of the agglomerated ore stack consists of 12 cells each with a minimum stack base width of 75 m and stack length 695 m.

The first 15 m section on the downstream end of each layer of the HL, measured from the toe of the must not exceed a slope of 1.5 % to ensure acceptable stack stability.

6.0 HISTORY

The Central African Copperbelt is a major metallogenic province that contains some of the world's richest deposits of copper and cobalt, including the world class Tenke – Fungurume (550Mt at 3.5% copper and 0.3% cobalt) and Kolwezi (760Mt at 4.4% copper). Modern mining has focussed on exploiting these rich copper and cobalt deposits for over the last 100 years. Annual production in DRC reached a peak in the mid 1980s of in excess of 500,000t of copper metal and 30,000t of cobalt metal. However, mining suffered from a lack of capital investment and limited exploration activity, particularly as a result of adverse political events and deterioration in the security situation in the 1990s. As a result, with most operations ceased or operated at restricted capacity, with the current metal production estimated to be less than 10% of previous peak levels.

Political change in recent years has led to increasing levels of confidence in the DRC, which in turn has led to increased interest from international mining companies. Renewed interest in the mining sector is evident, with companies such as Freeport-McMoran (Tenke-Fungurume), First Quantum (Lonshi, Kolwezi Tailings), Anvil (Dikulushi, Kinsevere), Nikanor (KOV) and Katanga Mining (Kamoto), investing in major development projects.

6.1 Prior Ownership

SEK secured the mining rights from Gecamines during 2005, with Exploration permits and an Exploitation Permit PE 533 over the central area. Gecamines is a state owned mining company and has held the rights since first application.

6.2 Present Ownership

Current ownership of the PE533, PE11383 to 11387 is held by SEK. SEK is a joint Venture company with 40% held by Gecamines and 60% held by Congo Minerals, a subsidiary of Tiger Resources Limited (TIGER).

6.3 Previous Exploration

Prior to 2006 limited exploration had been conducted in the Kipoi area. Regional non-invasive exploration including regional surface grab samples, local samples from out crops and some structural mapping formed the basis for definition of the Kipoi mineralization. No drilling results are available from the early search works conducted.

6.4 Previous Mineral Resources and Reserves

The Kipoi Central and Kileba Mineral Resource estimates reported in this technical report are updates of the Mineral Resource estimates previously reported publically in the NI43-101 Technical Report dated November 2011.

Mine design and Mineral Reserves for Kipoi Central have previously been reported in the CSA NI43-101 Technical Report dated October 2008 as part of the FS for Kipoi Central Stage 1. A further optimisation study for Stage 1 was reported in the CSA NI43-101 Technical Report dated May 2009.

The Kipoi North Mineral Resource estimate reported in this technical report is an update from the Mineral Resource estimates previously reported in the CSA 43-101 Technical Report dated July 2010.

6.5 Previous Mining

No previous commercial large scale mining has been undertaken at the Kipoi Copper Project prior to Stage 1. Hand picking of copper rich ore had taken place in the area over the last 20 years. More recently SEK has conducted surface sampling for metallurgical testwork and assessment of commercial scale exploitation.

Mining of Stage 1 commenced during November 2010 and has proceeded with 16.2 Mt of ore and waste removed from Kipoi Central since November 2010.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Neo-Proterozoic Central African Copperbelt forms an almost 700km long and 150km wide, arc-shaped fold belt also known as the Lufilian Arc, extends from north-eastern Zambia and the south-eastern part of the DRC in a west north-westerly direction to the border area with Angola. The Copperbelt constitutes a metallogenic province that contains some of the world's richest deposits of copper and cobalt. The Kipoi Copper Project is located in the central part of the Congolese part of the Copperbelt, in the Katanga Province, DRC Figure 7-1.

The Lufilian Arc, which is one of several Pan-African fold belts that fringe the Congo and Kalahari Cratons. Each of these belts records a history of intra-cratonic rift development which commenced with the dispersal and amalgamation of a Meso-Proterozoic supercontinent (1800-1600 Ma), followed by the late Neo-Proterozoic Lufilian orogeny and collisional deformation and metamorphism, which occurred during the assembly of central Gondwana (600-500 Ma). The Lufilian Orogeny, which led to the formation of the Lufilian Arc involved north to north-eastward directed thrusting, which resulted in an arcuate shaped tectonic belt that strikes almost north northwest in Zambia and east-west at Kolwezi in the DRC.

The Katangan supracrustal sedimentary succession that accumulated in the location of the Lufilian arc is inferred to be between 5-10km thick and is subdivided into three major stratigraphic units being the Roan, Nguba and Kundelungu Groups (Cailteux et al., 2005). The basal Roan Group constitutes siliciclastic and carbonate rocks deposited in fluvial and lacustrine environments and volcanic and plutonic rocks emplaced in an intra-continental depositional setting. The Nguba Group (formerly known as the Lower Kundelungu) is made up of a succession of siliciclastic and carbonate rocks that includes locally mafic igneous rocks emplaced in a proto-oceanic setting. The Kundelungu sedimentary rocks represent a continental clastic molasse sequence extending into the Palaeozoic.

The Lufilian Arc is best defined by outcrops of the Neo-Proterozoic Roan to Kundelungu Group sediments, which occur in a series of tight anticlines that are disjointed and offset by faults and breccia bodies. Mega-fragments ("écailles") of Roan Group rocks which can measure up to 10km in length, host the major deposits of the Katangan Copper belt (Figure 7-2). The basal part of this sedimentary succession, the Lower Mines Series, is host to the major copper-cobalt deposits, including the mineralisation at Kipoi Project, however, economic copper and lead-zinc mineralisation is known to occur in the Nguba and Kundelungu Groups (DeMagnee and Francois, 1988).

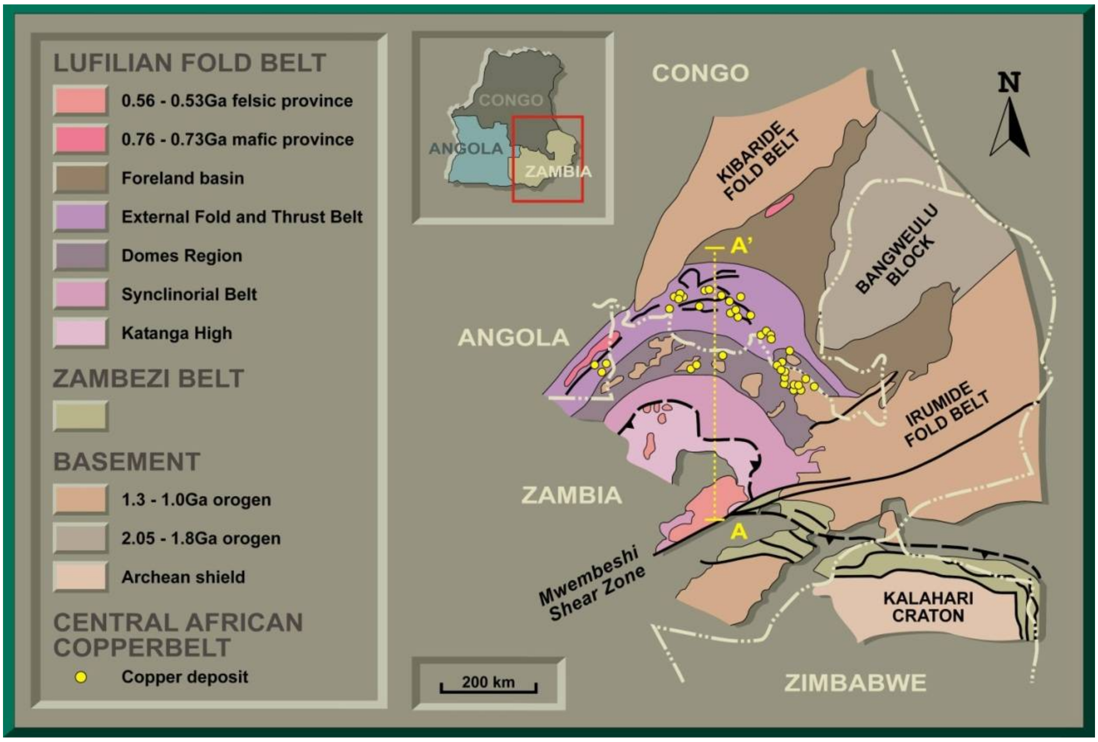

Figure 7-1 Simplified Geological Map of the Lufilian Arc and Geotectonic Domains (after Selley et al., 2007)

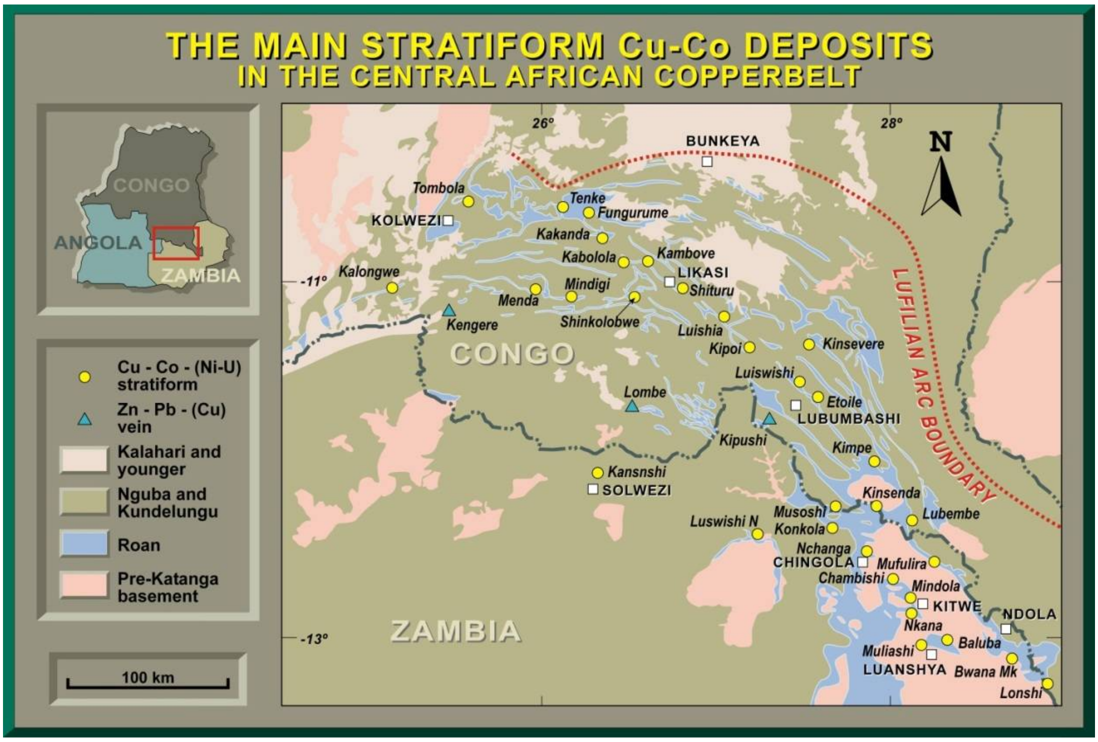

Figure 7-2 Simplified Geological and Main Copper-Cobalt Deposits (Caiteaux et al., 2005)

GROUP	SUB-GROUP	FORMATION	MEMBER	LITHOLOGY	
Upper Kundelungu	**Plateaux (Ks-3)**			arkoses with sandstones and shales	
	Kiubo (Ks-2)	Ks-2.2 / Ks-2.1		carbonated shales, sandy and argillaceous shales, sandstones	
	Kalule (Ks-1)	Ks-1.3 / Ks-1.2		carbonated siltstones, sandy and argillaceous shales, pink limestones	
		Ks-1.1		diamictite ('petit conglomerat')	
Nguba (Lower Kundelungu)	**Monwezi (Ki-2)**			arkosic sandstones with carbonated shales and siltstones	
	Likasi (Ki-1)	Ki-1.3		carbonated shales and siltstones	
		Ki-1.2		dolomites and limestones with shales	
		Ki-1.1		diamictite ('grand conglomerat')	
Roan (R)	**Mwashya (R-4)**	R-4.2		dolomitic shales, with sandstones or carbonaceous shales at top, 'conglomerate de Mwashya' at the base	
		R-4.1		dolostones, dolomitic shales, jasper, oolites, pyroclastic units, iron	
	Dipeta (R-3)	R-3.4 / R-3.3		dolostones, limestones, shales, sandstones and arkoses	
		R-3.2 / R-3.1		dolomitic and argillaceous siltstones (R.G.S.) dolostones	
	Mines Group (R-2)	Kambove Dolomite (formerly C.M.N.) (R-2.3)	Upper	pink brown to white dolomite, talcous dolomite, evaporitic breccia, red siltstone	
				dolomite, stromatolites, talcous dolomite, evaporitic breccia, grey-green siltstone	Third OB
				pink brown to white massive dolomite	
			Lower	massive stromatolitic dolomites, crypto-algal & laminated talcous dolomite	
				laminated algal dolomite	
				massive dolomite, stromatolites, dolomitic shale	
		Dolomitic Shales (S.D. or R-2.2)	**S.D.3b**	carbonaceous dolomitic shale	
			S.D.3a	dolomitic shale, shaley dolomite	
			S.D.2d	carbonaceous dolomitic shale	
			S.D.2b+2c	dolomitic shale, shaley dolomite	
			S.D.2a	carbonaceous dolomitic shale	
			B.O.M.Z.	Black Ore Mineralised Zone	Upper OB
			S.D.B.	Basal dolomitic shale	
		Kamoto Dolomite (R-2.1)	**R.S.C.**	"Roche Siliceuse Cellulaire"	
			R.S.F.	"Roche Siliceuse Feuilletee"	Lower OB
			D.Strat.	stratified dolomite	
			Grey R.A.T.	grey-green siltstone	
	R.A.T. (R-1)		Red R.A.T	“Roche Argilleuse Talcose”	
Base of R.A.T. sequence – Unknown					
Basal Conglomerate					

Table 7.1 Stratigraphy of the Katangan System

7.2 Kipoi Central Deposit and Local Geology

The geological mapping of the Kipoi Mine area has recently been revised and updated based on detailed pit mapping (Figure 7-3). Gecamines have mapped the lithological succession at the Kipoi Central prospect as part of the Mwashya Sub-group (R4), the youngest of the Roan sub-groups. These abut tillites or diamictites of the Nguba Group across a structurally overprinted or reactivated unconformable contact (in places, discordantly underlain by talcous brecciated rocks of the lowermost Mines sub-group (R1 and R2.1, *breche heterogene*[1]). Geochemical data suggest that the R1 talcose sandy breccias are of diapiric origin and to be representing insoluble components of an extruding mixed evaporite rock. It has been inferred that the evaporite rocks originated from lower (older) stratigraphic levels and were mobilised through tectonic shortening during the Lufilian orogeny. The rock succession of the R4 in the deposit area includes from the northwest to the southeast, a steep to upright, southeast dipping package of interbedded carbonate rocks and siltstones. Above the base of oxidation the carbonate rocks are strongly weathered, red-brown and partly indurated by iron oxides and silica. Original cryptalgal lamination textures can be recognised. They tend to contain enriched supergene copper and cobalt mineralisation. This interbedded package is separated by a rock unit that consists primarily of light green talc-chlorite-carbonate minerals that are interpreted to be of retrograde altered mafic or intermediate mafic or pyroclastic parentage. In drillcore, the volcano – or pyroclastic rocks appear massive with internal breccias of monomictic, irregular and angular clasts. In outcrop, they commonly form a recessed topography and show no internal structure, but have a distinct massive texture and a talcous feel. A narrow jasperoid haematite unit locally 1 to 3m wide commonly marks the hanging wall contact to the adjacent rock unit. Tho the southeast the volcanic rocks are in contact with fine and medium thick bedded and slaty calcareous siltstones with minor stromatolitic carbonate beds.

The above described coherent rock succession is truncated in the footwall by talcous heterogenous breccias of the "*breche heterogene*" and unconfomably overlain by tillites of the Nguba Group.

[1] The Term "*breche heterogene*" for the polylithic matrix supported talcous dolomitic siltstone breccia has been adapted from the francophone technical literature. It is used here as a descriptive term for a discordant rock type the origin of which is still debated despite strong evidence indicating its evaporitic origin.

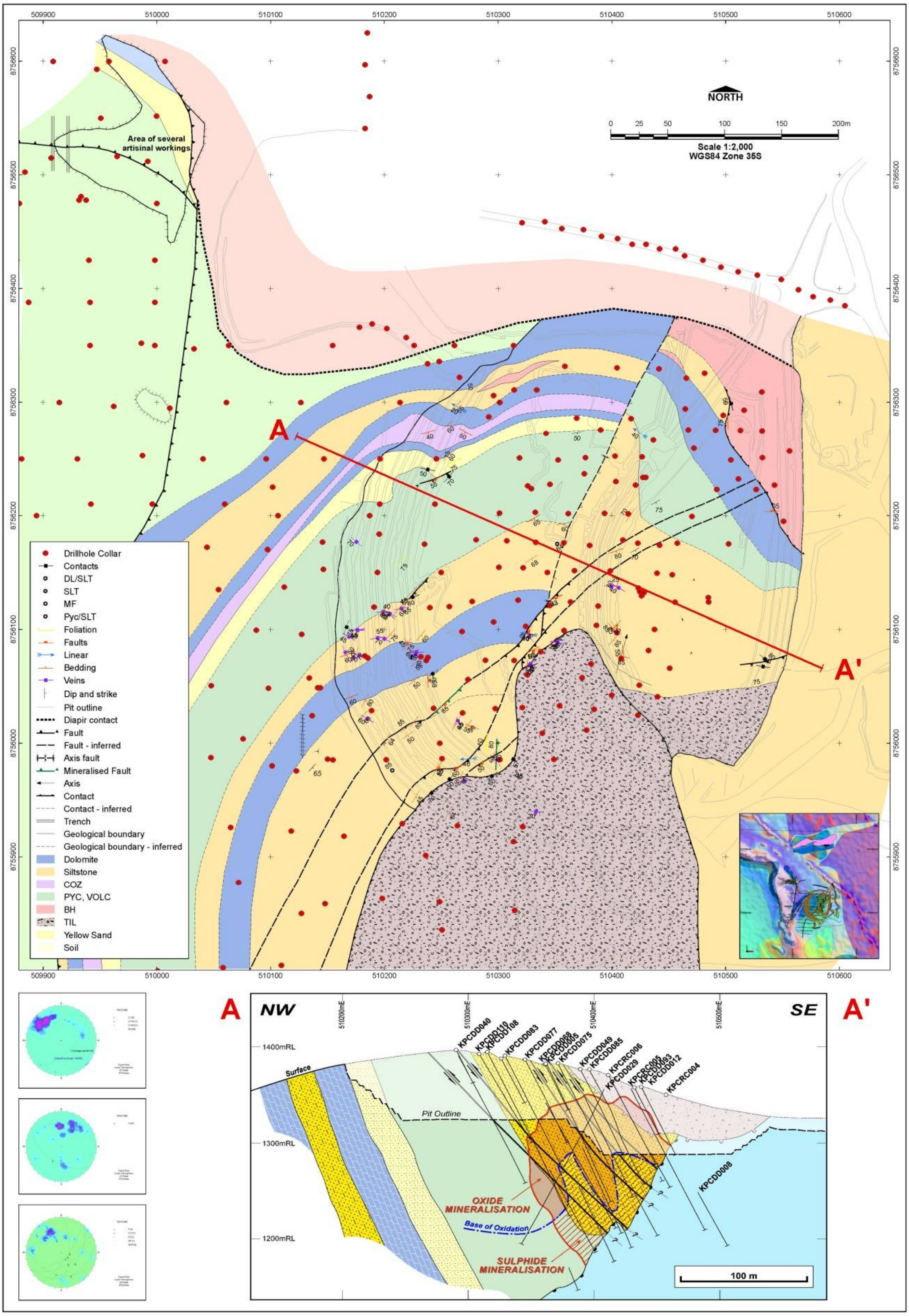

Figure 7-3 Simplified Geological Map of the Kipoi Central Project as of May 2012

The overlying Nguba Group sediments are stratigraphically the youngest rock package. The group is made up of a massive competent siltstone to sandstone facies that includes well rounded matrix supported clasts of quartz, quartzite and low grade metamorphic schist. The rocks are interpreted to be diamictites of a glacial origin.

The underlying and cross cutting *Breche Heterogene* has a soft, talc calcareous matrix which hosts sub-angular, partly rounded clasts of grey and purple calcareous siltstones (Figure 7-4, slide E). The *Breche Heterogene* has a very irregular contact with the juxtaposing rocks. The base of the *breche heterogene* is not known.

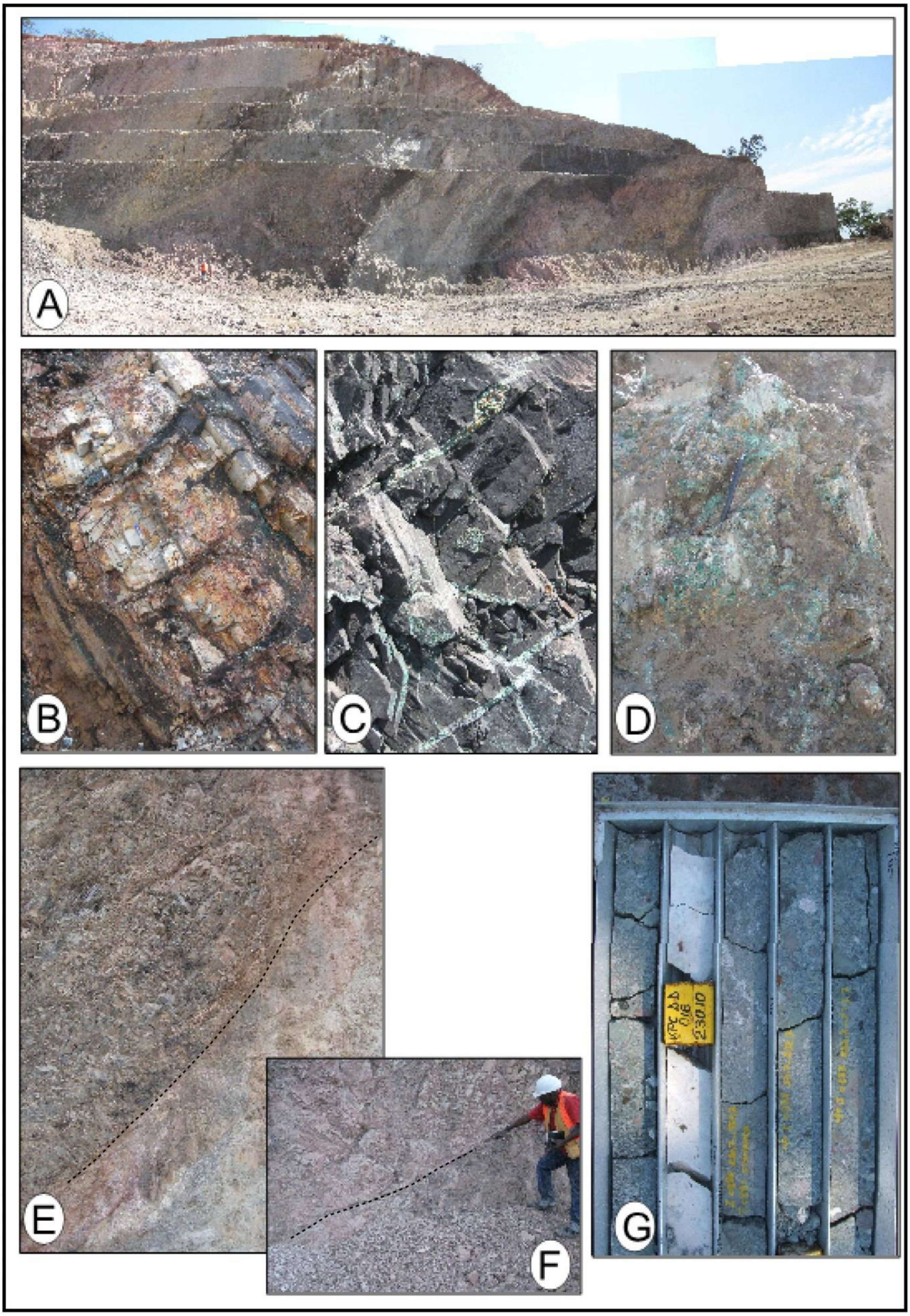

Figure 7-4 Photo plate Kipoi Central

(A), Northwest wall of open pit operation looking west (B), Cross cutting R.4 siltstones (C), carbonaceous dolomitic siltstones showing stratiform and cross cutting vein mineralisation supergene mineralization (D) supergene mineralisation in weathered dolomites (E) high-angle south-southeast dipping reverse fault (F) shallow angle late stage brittle reverse fault and (G) polymict matrix supported breccia "breche heterogene"

Open cast mining at Kipoi Central has provided access to a section of R4 rock succession (Figure 7-3) that shows, tilted strata and post-lithification deformation in the form of faults that are moderately southeast dipping or at a high angle to bedding. The areas between faults, in particularly siltstone members are weakly deformed showing cross cutting, conjugate shallow-dipping vein sets (Figure 7-4, slide F and slide G, Figure 7-5).

Stereographic analysis of bedding measurements from sedimentary rocks of the R4 rock package at Kipoi Central show that these rocks are uniformly dipping at between 60˚ and 70˚ to the south southeast and strike in an east - northeast (~035˚) direction (Figure 7-3). A small number of parasitic fold axis measurements at a decimetre-scale were observed in the pit walls. These measurements indicate an orientation of the fold axis near orthogonal to the strikes of strata. The folds were observed to occur near shallow dipping faults and are interpreted to indicate their formation during brittle faulting of the R4 package of rocks.

Outcrop relationships indicate that the contact relationship with the overlying Nguba Group sediments is a structurally overprinted and reactivated unconformable contact and the contact of the R4 sequence with the underlying *breche heterogene* is an irregular but generally steep to upright contact surface (Figure 7-4). Late stage mineralised veins cross cut the contact between the Nguba and R4 rock sequence.

The deposit strata are deformed by post-lithification brittle faults transecting the R4 strata in a southwest – northeast direction and dip to the southeast. The displacement across the observed faults cannot be quantified however, the justoposition of the strata suggests that is more likely in the order of tens of meters rather than hundreds of meters. It also remains unclear as to whether the faults extend into the underlying *breche heterogene*.

The brittle faults breccias do not appear to be major ore-fluid conduits. The fault gouge commonly appears "dry" and not cemented following the passage of mineralising fluid. However, fault segments orientated favourably to the principal stress orientation (e.g. releasing bends, dilatant flexures) tend to show similar mineralisation precipitation as is displayed by the tensile conjugate veins.

Despite the higher level of confidence achieved through for structural data collection from the mining operation the data remains constrained to the extent of the pit area and can therefore not be extrapolated without doubt to surrounding prospects.. However, based on current observations it is possible to infer that the Kipoi Central deposit area is a tilted segment of a structurally and diaper-induced dismembered segment of R4 sediments which terminate in the east against *breche heterogene* and abuts in the west, an uplifted segment of Lower R4 pyroclastic rocks. It appears that this deformation occurred during or after the deposition of the Upper Kundelungu tillites and post-lithification of both stratigraphic units. The deformation may have been triggered in the deposit area by the closure of the Katanga basin and was accelerated an dmodified by the mobilisation of evaporite units in the stratigraphy.

7.2.1 Controls on Mineralisation

A diagrammatic 3D model of the geological setting at the Kipoi Central deposit is shown in Figure 7-5. The drawing depicts the steeply dipping nature of the R4 sediments and the disconformable contact with the underlying *breche heterogene* and the unconformable contact with the overlying tillites.

Mineralization is predominantly associated with the Upper Roan (R4, red stipples) sediments with minor mineralisation occurring in the pyroclastic rocks or the overlying tillites. Structure appears to be the predominant control on the distribution and emplacement of mineralisation.

The model highlights several spatial and geometrical aspects of mineralisation that may have a bearing on the approach to exploration and drill targeting:

- Structures and rock fabric resulting from deformation provide the main setting for mineralisation;
- Algal laminated carbonate rocks and graphitic calcareous siltstone represent and addition control particularly for stratifrom mineralisation;
- Rock competency is interpreted to be important as the rheological contrast and response of different rock types to deformation will determine the generation and localisation of porosity in the form of veins and breccias. This may be reflected in the concentration of structures in the clastic sediments as these respond morebrittle relative to the pyroclastics;
- Secondary copper veins and irregular shaped caverns filled with supergene mineralization extending for several meters laterally into the overlying tillites have been intersected in drilling. This mineralization can't be traced back to structural or a primary fabric and therefore its quantification and interpretation is difficult;
- Allochtonous brecciated R1 and lowermost R2 (breche heterogene, Mines Series) commonly represent the footwall to the mineralization in R2 to R4 Mines Series in the Congolese Copperbelt. The diapiric or intrusive (not in the conventional volcanic context) geometry of the breche heterogene is difficult to predict as its contact with the sediments is an irregular surface and can occur in the form of a dyke, a pipe or a plume-like body. It is recommended drill holes be generally extended well beyond the contact with the breche heterogene as it may have only a limited thickness.

All the above geological, structural and mineralisation features of the Kipoi Central deposit are similar to other copper deposits in the DRC, from both a genetic and an economic perspective.

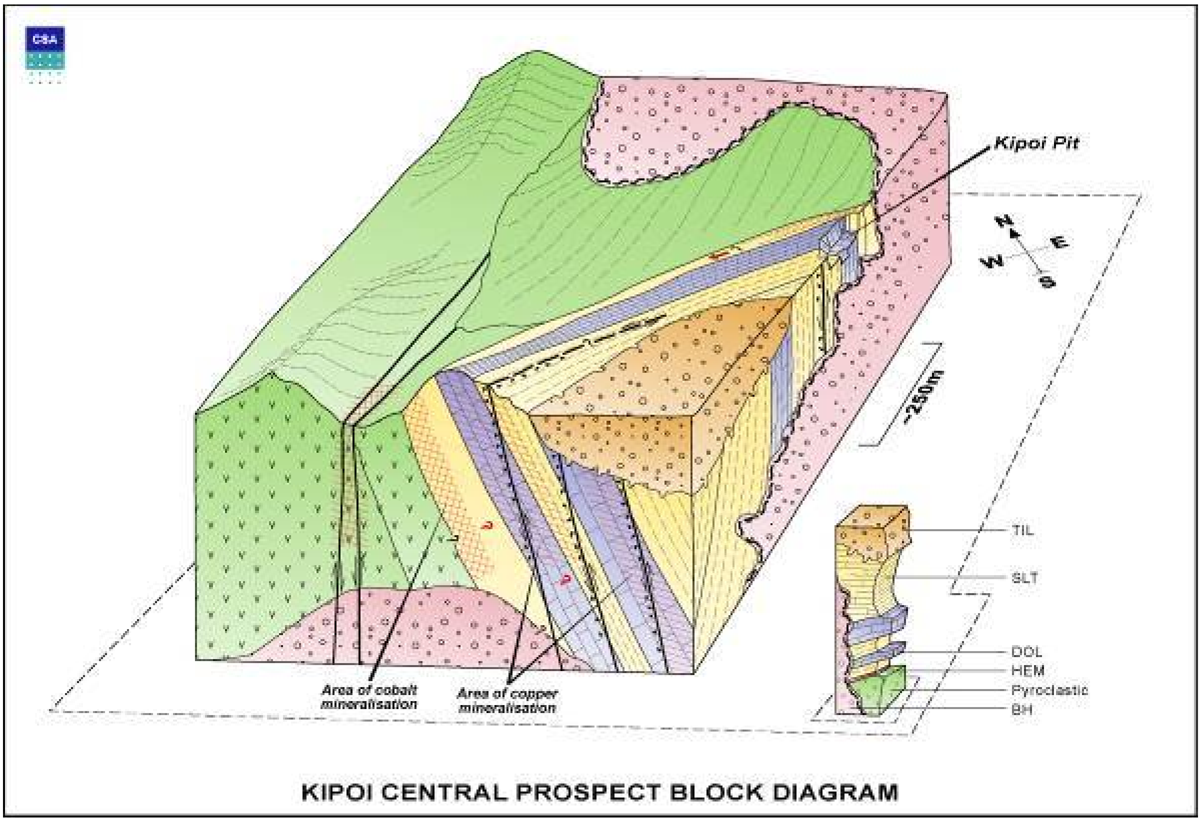

Figure 7-5 3D Model of the Kipoi Central Deposit Area

7.3 Kipoi North Prospect and Local Geology

The Kipoi North deposit is located about 1km north of the Kipoi Central mine. Despite its proximity to Kipoi Central, the geology at Kipoi North differs significantly from other deposits (Kipoi Central, Kileba, Judeira) in the Kipoi Project area, as a result of deformation leading to the extrusion of evaporite material that facilitated large-scale fragmentation of the Mines Series rocks

Gecamines mapped Lower R2 Series rocks (Mines Series, Table 7.1, Figure 7-6) in the area based on outcrop and trenching. Subsequent to the mapping, artisanal miners exploited the cuperiferous R2 beds and established a small open pit. The open pit is oriented east-west, sub-parallel to strike of the geologic units (Figure 7-7, slide A and slide B). The entire section exposed in the workings is represents the overturned steeply north dipping limb of a near isoclinal, tight fold. As is the case for Kipoi Central, the mineralisation-hosting R2 sequence of rocks measures approximately 1.2km along strike and is surrounded by *breche heterogene*.

The Lower Mines Series (R2) is a succession that includes, from north to south, a massive grey- green to red oxidised unit of calcareous siltstones of unknown thickness referred to as the Grey RAT (Table 7.1). Figure 7-6 shows a stratified dolomitic unit, about 4m to 8m wide (DStrat) which is in fault contact with the RAT. This unit is overlain by, fine laminated silty stromatolitic dolomite (RSF). The unit measures less then 3m in outcrop and core (Figure 7-6). It is overlain by a vuggy, cellular, massive, stromatolitic, silty dolomite (RSC) in Figure 7-7, slide C and slide D. This unit can be up to 40m thick.

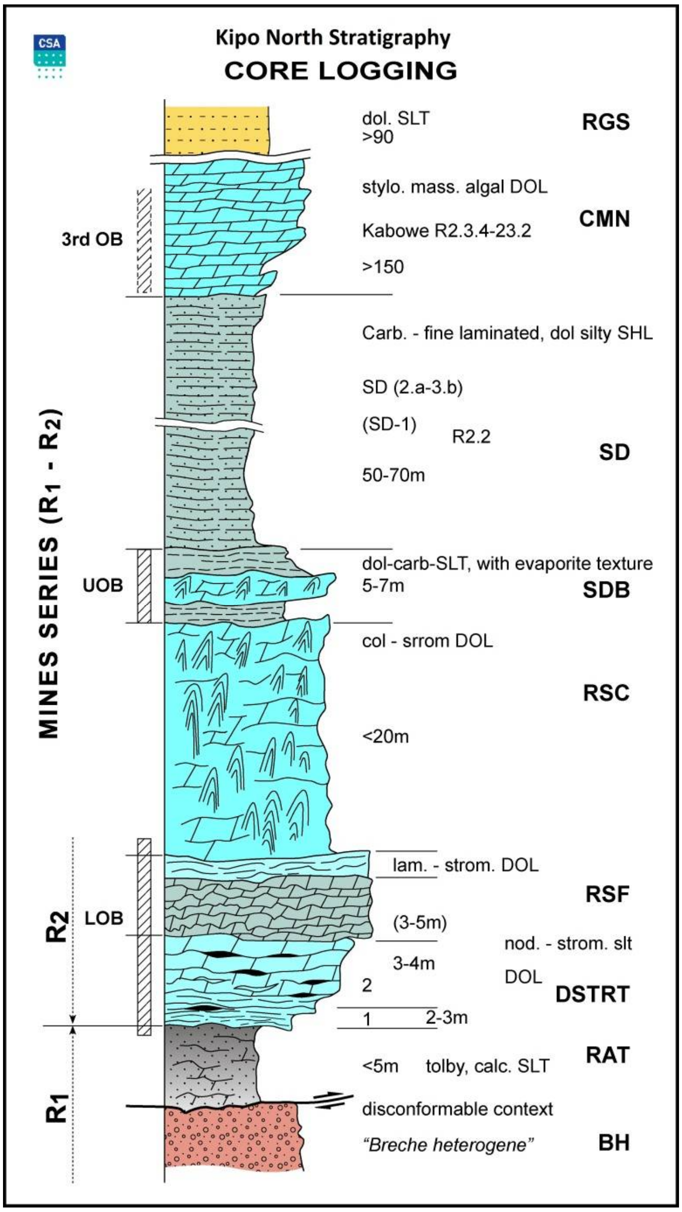

Figure 7-6 Stratigraphic column of the Lower Mines Series rocks at Kipoi N

A thin graphitic (< 1m) laminated, sulphidic dolomitic siltstone (anoxic facies) immediately overlies the RSC and is overlain by a thick light red, laminar stromatolitic dolomite (SD). The dolomitic siltstone unit has been intersected by drilling. Overall this succession of sedimentary rocks typically occurs at the base of the Mines Series in Katanga.

Breche heterogene occurs in several locations. In outcrop, the *breche heterogene* flanks the R2 sequence in the south pit wall. It has been intersected in DC drilling as intermittent dyke-like bodies several meters wide and forms the footwall to the mineralisation. This Breche Heterogene contact with the R2 rocks, is irregular and discordant. This is similar to the contact relationship observed at Kipoi Central. Texturally, the *breche heterogene* is a polymictic agglomerate of oxidised red and grey-green reduced facies calcareous siltstone fragments floating in a soft talcose, calcareous clay rich matrix. Figure 7-8 - illustrates graphically the geological relationships discussed above.

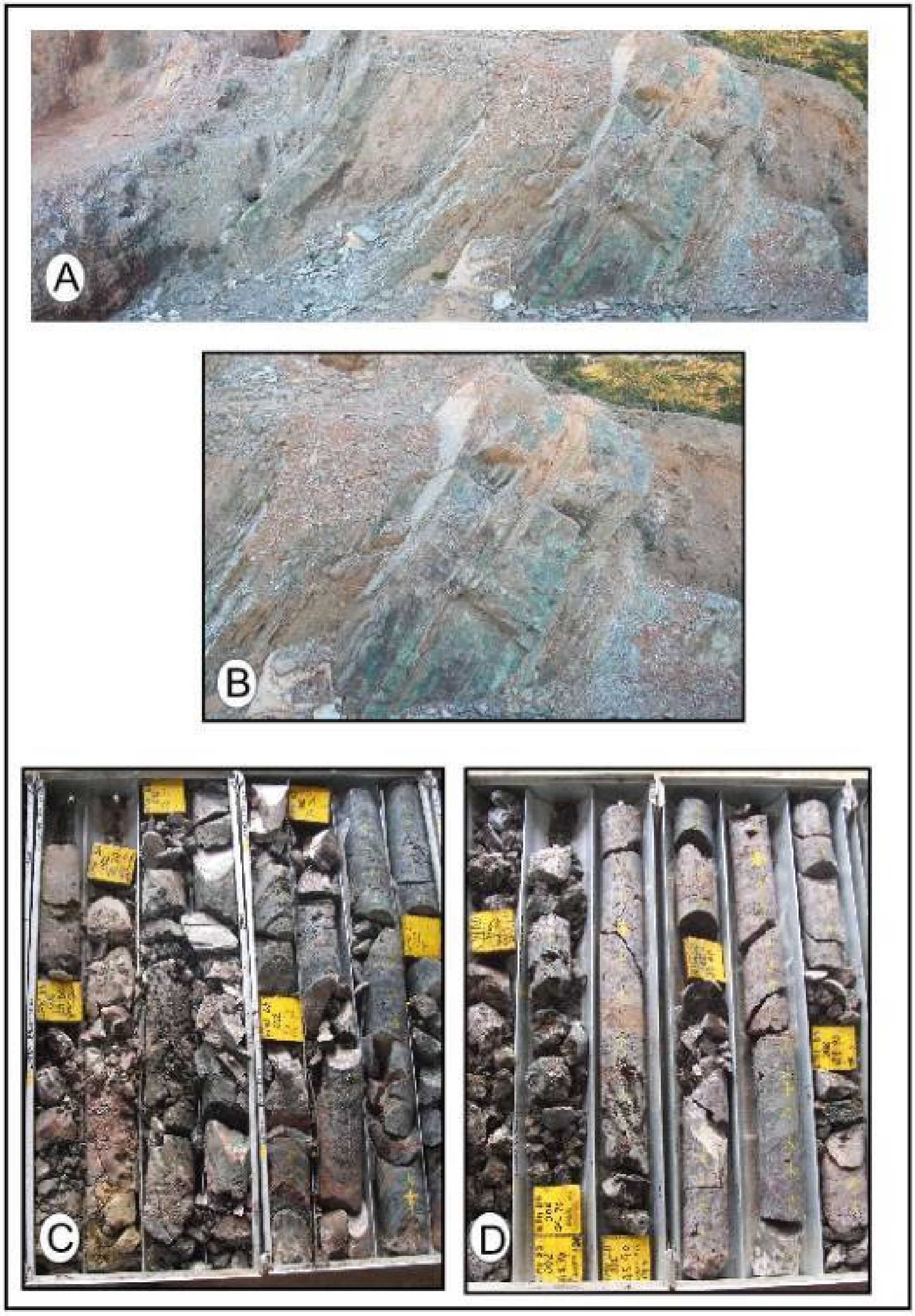

Figure 7-7 Kipoi North Pit

Photoplate of principal rock types as Kipoi North. (A) Cross-section view of R2 strata in outcrop, (B) close up view of the transition DStrat-RSF in outcrop, (C) transition DStrat-RSF in core, and (D) vuggy RSC.

7.3.1 Structural Setting

Mappable structural data is confined to observation and measurements in the artisanal open cut. The following structural interpretation is based on a compilation of pit mapping and drill core interpretation.

Drill holes KPN001, 3, and 5 drilled north of the current pit intersected a thin but normal bedded sequence of R2 sediments, separated by a sliver of grey RAT or *breche heterogene* interpreted to be an overturned succession of R2. The stratigraphy in the pit area is also overturned and shows the grey RAT being faulted against the DStrat along a sheared rubble breccia zone up to several meters wide, with a strong penetrating shear foliation fabric that strikes about east-west and dips at about 65˚ to the north. The sheared rubble breccia zone has been interpreted to indicate a sheared, possibly south thrusted recumbent fold. This structural interpretation following the first phase of drilling in 2008 was confirmed during 2012 resource infill drilling.

The inferred concept has significance with regard to ongoing exploration. The main implication being that the "fold model" implies an element of lateral and vertical continuity and exploration prospectivity.

The data to date is sufficient to conclude with confidence the structural nature of the setting at Kipoi North. However, based on current knowledge and experience there is additional work to be completed to test for additional resources indicated by the structural model.

7.3.2 Geological Model

The geological model for the Kipoi North deposit is well constrained, based on the historic and current geological database for the area.

Based on the current information the R2 sequence of rocks is interpreted as remand dismembered limbs of an overturned south-verging fold. The emplacement of *breche heterogene* material controlled by regional deformation, significantly affected this setting. The fold model predicts that systematic drilling along strike from the known geological setting should confirm continuity of the R2 sequence below cover. Recent drilling has confirmed the continuity of mineralisation to the west.

Confidence about stratigraphic continuity at depth is less well constrained. A more complex setting is indicated by drilling down dip. The inferred fold appears to be faulted or truncated at depth against RAT sediments. RC drilling to the west of KPNDD006 has confirmed the southerly dip of mineralisation and its continuation to the west thus supporting the fold model. However, the change in dip along strike, suggests more lithological and structural data from DC drilling is needed to confidently establish a detailed geological model.

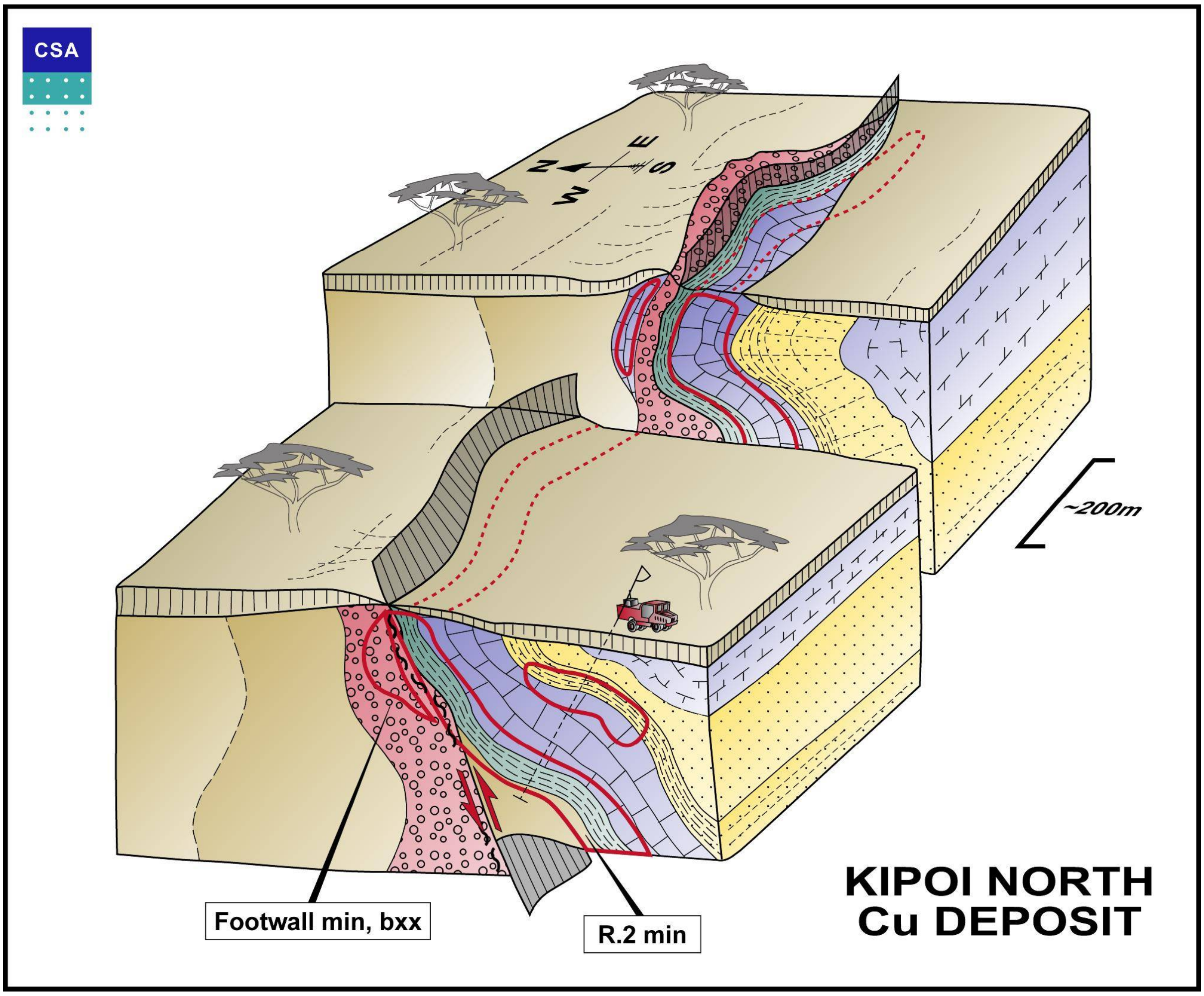

Figure 7-8 North diagrammatic illustration of the geological setting

7.4 Kileba Prospect and Local Geology

7.4.1 Deposit Geology

The Kileba deposit is located about 7km south-east of Kipoi Central and occurs as two northwest-trending ridges transected and divided by a northeast trending gully into a north western ridge segment and a south eastern segment (Figure 7-10). The host rocks in the Kileba area are correlatives of the R4 sequence of rocks intersected at Kipoi Central and are overlain by Kundelungu tillite facies.

Artisanal workings extend intermittently over a distance of about 1.1km along the crest of both ridges providing access to part of the stratigraphy. Northwest striking weathered talcose pyroclastic rocks occur on the northeast side of the ridge, which are interpreted to be the oldest rocks of the R4 sequence and are in contact with siliciclastic sedimentary rocks in the hanging wall. The pyroclastic rocks are overlain by interbedded dolomitic, graphitic and shaly siltstones, a massive algal dolomite member, an evaporitic calcarenite member and interbedded fine and medium grained sandstone units (Figure 7-9). The siliciclastic sediments in contact with the pyroclastic rocks are well stratified with more weathering resistive coarse-grained siltstone to sandstone beds separated by fine-grained recessive slaty siltstone beds. The contact between pyroclastic rocks and sediments appears strongly sheared and mineralised (Figure 7-9).

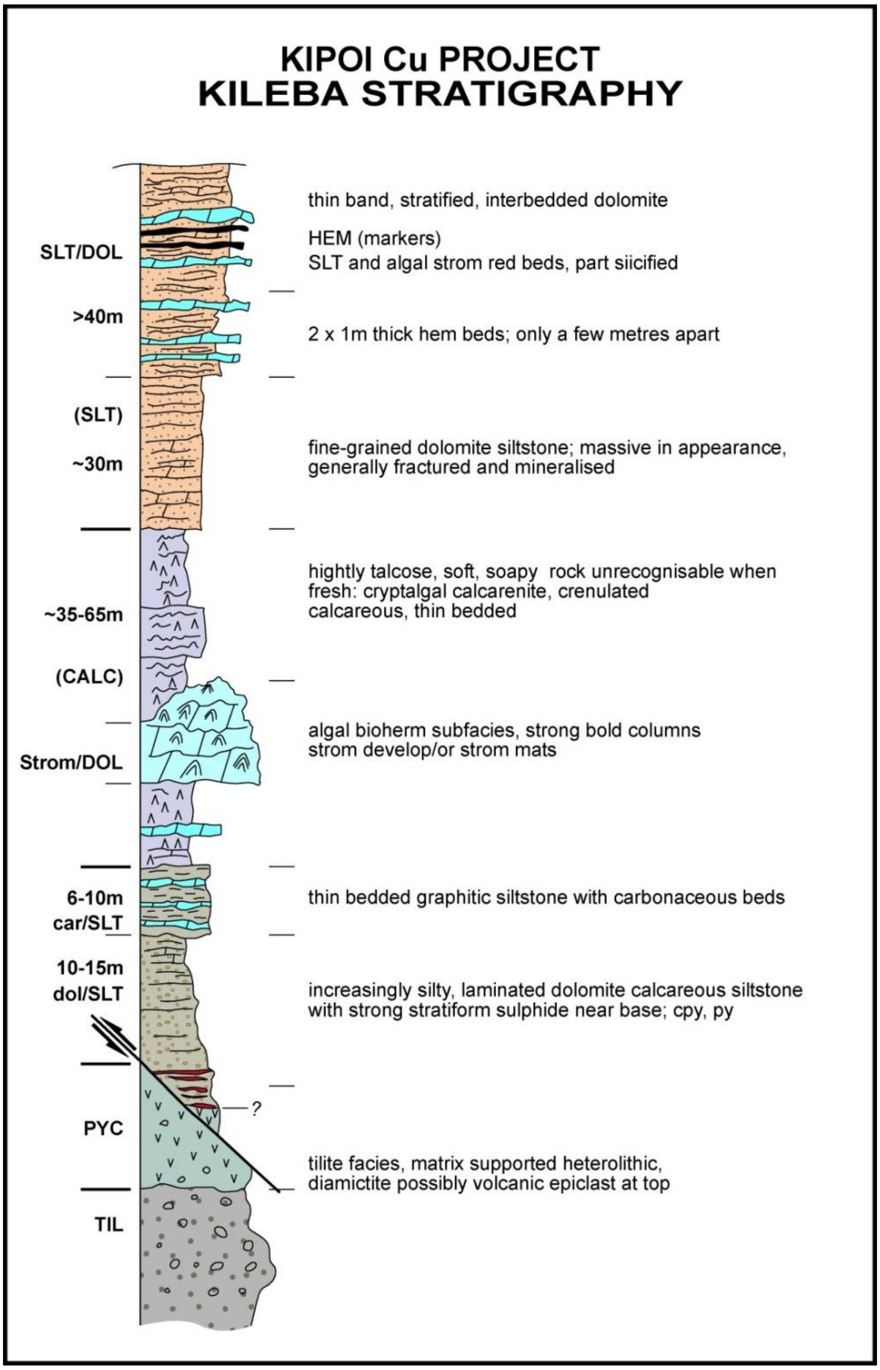

Figure 7-9 Litho-stratigraphic section of the Kileba deposit

Two close spaced and laterally continuous, about 1-2m wide lens of haematite marker beds are located within the siltstone unit, about 120m stratigraphically above the pyroclastic contact. The haematite lenses appear to be sub- parallel to bedding. In places, they contains internal breccias however, generally consists of laminated specular haematite (Figure 7-9).

A corresponding geological succession has been mapped and intersected in the north western part of the prospect area (northwest ride segment). A southwest dipping sedimentary succession consisting of siltstones and dolomitic siltstones is in contact with a pyroclastic unit to the northeast. A trench near the south eastern end of the ridge exposes this contact between the units above and shows both units to be highly deformed, sheared and dipping to the southwest (Figure 7-10).

A narrow lens of haematite (less than 20cm) occurs adjacent to the northwest trending fault breccia. The fault strikes parallel to the ridge and is entirely hosted within pyroclastic rocks. By contrast with the southern area, the narrow haematite lens in the northwest is located in the fault gouge zone.

This report follows the stratigraphic classification of the prospect area as determined on the GECAMINES map, which places the pyroclastic rocks into the R.4.1 and the overlying sediments into the R.4.2.

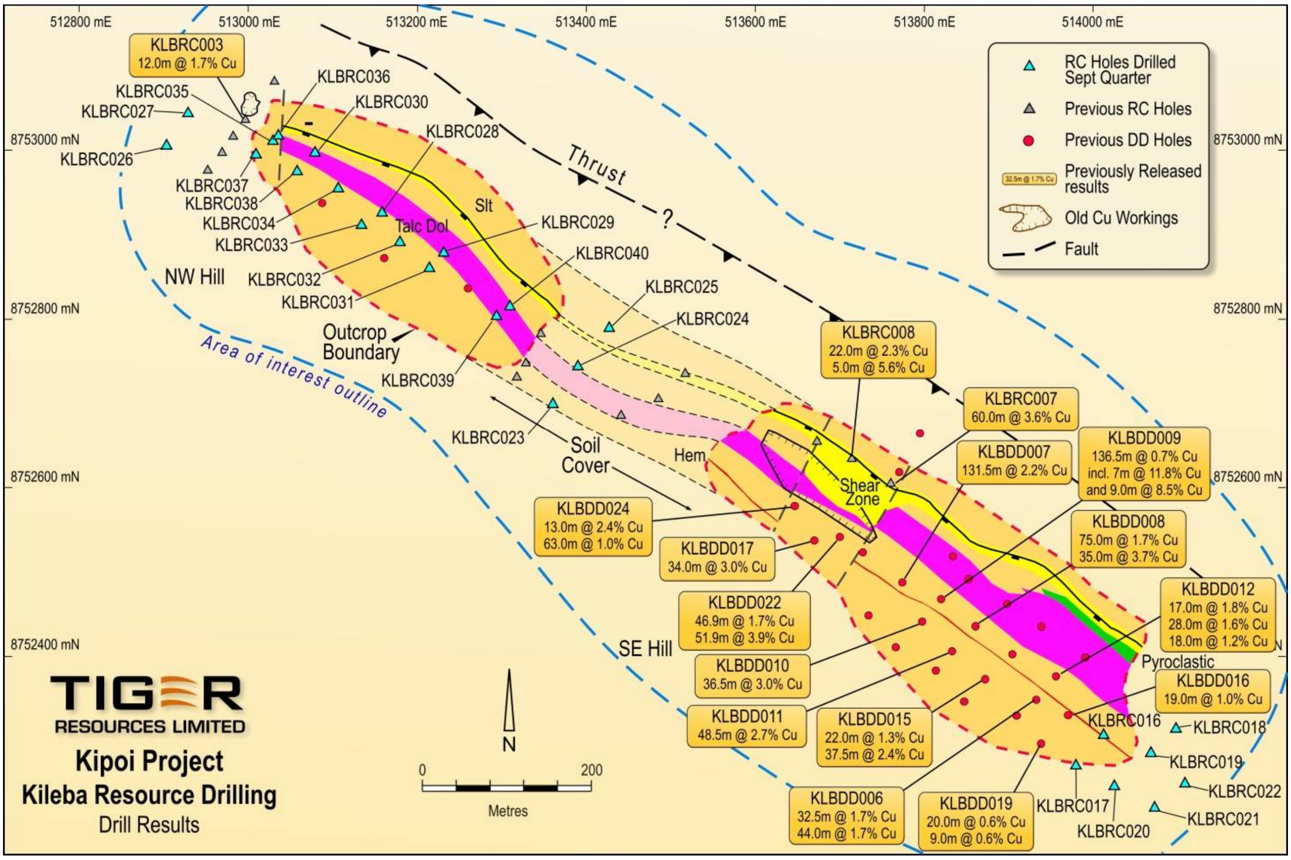

Figure 7-10 Geological Plan of the Kileba Prospect

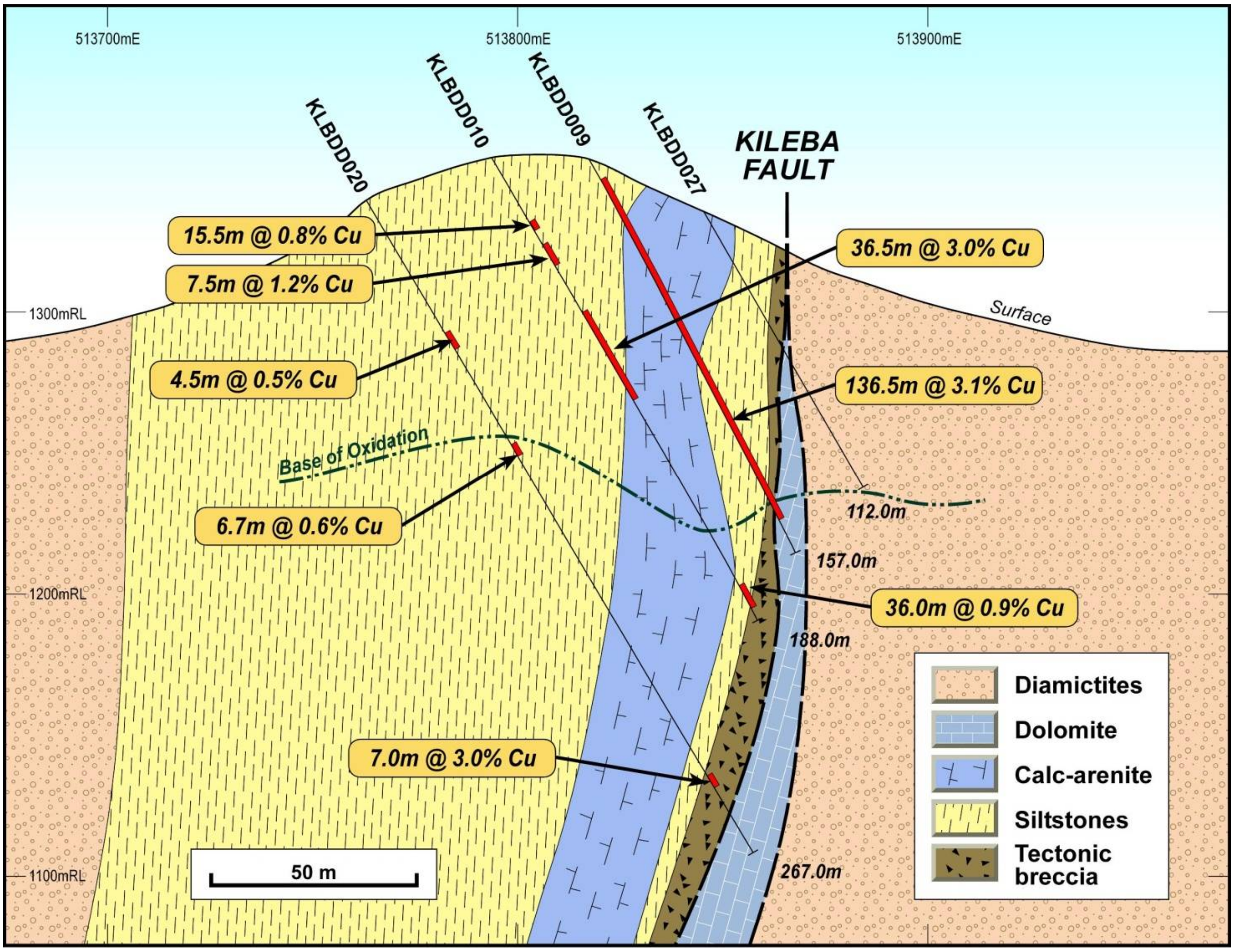

Figure 7-11 Schematic SW-NE Trending Geological Section of the Kileba Prospect

7.4.2 Structure

Overall the rock sequence present at Kileba is sub-vertical to steeply southwest dipping. It becomes shallower dipping to the northwest. A dip reversal is seen above the northwest end of the southern area at Kileba where the rocks abruptly dip to the northeast. The dip reversal is interpreted to be associated with a narrow discrete north northeast trending sub-vertical fault. A second dip reversal is inferred to occur in the gap separating the ridges as the north western outcrop area shows southwest dipping strata. Sub-vertical north trending brittle faults are mapped at the north end of the northern outcrop area. North northeast trending structures cross cut and post-date northwest trending structures, suggesting that either the regional stress varied through time or that progressive deformation resulted in secondary splay structure developing locally.

The contact between the pyroclastic rocks and the hanging wall sediments is faulted. Strong brecciation and strong shearing is present at all exposed localities along the fault. The fault slip plane is measurable in an artisanal adit at the south eastern end of the main pit area. The shear foliation fabric indicates a curved (listric) fault surface (Figure 7-11).

The regional magnetic data suggest that the Kileba area is located on the north eastern flank of a regional northwest-striking syncline, the centre of which is located to the southwest of Kileba and is depicted in Figure 7-12. The geological scenario has geological similarities with Judeira. It is not clear whether the syncline is followed by an anticline structure or is terminated against a fault to the southwest. To the northwest, both outcrop and drilling are interpreted to suggest thrusting of the syncline onto another syncline.

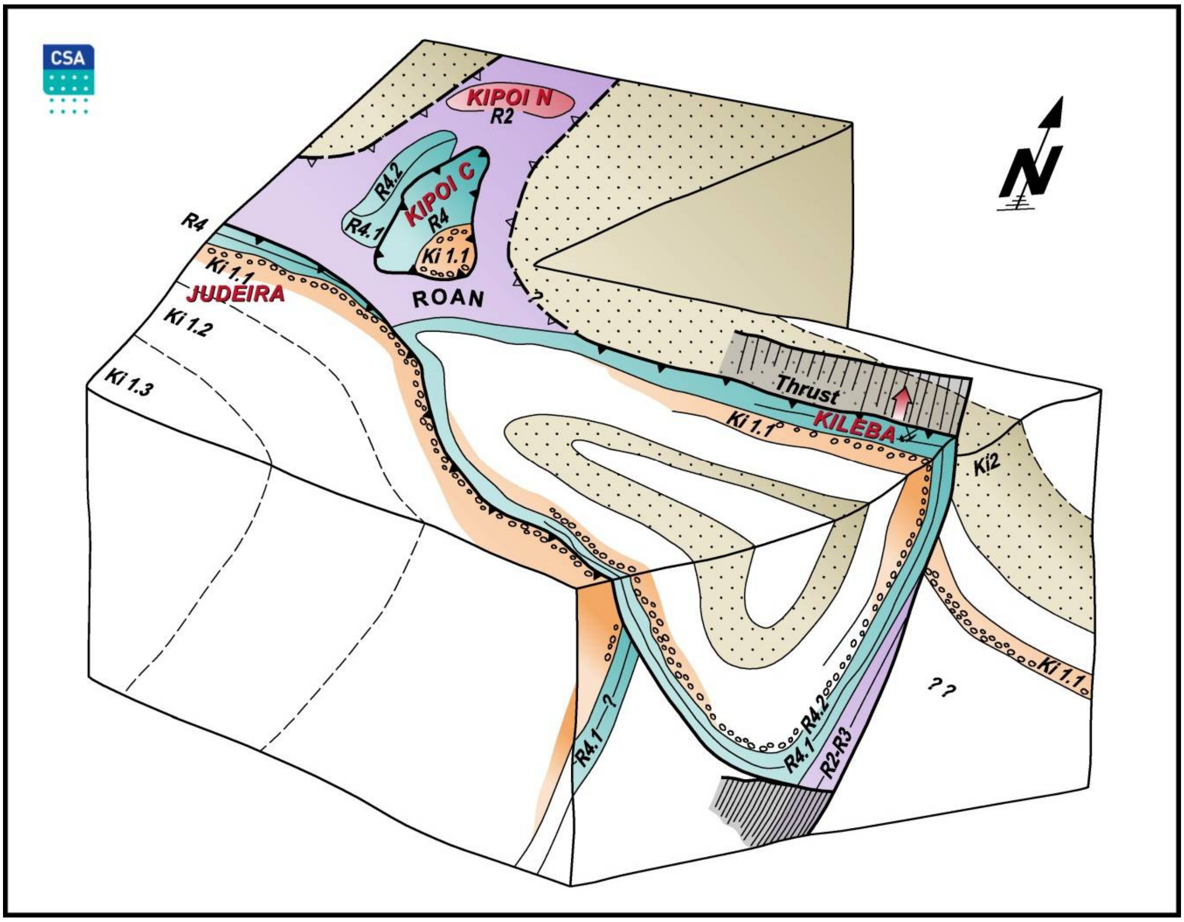

Figure 7-12 Diagrammatic illustration of the project scale structural geological setting

7.5 Judeira Prospect and Local Geology

The Judeira prospect is located approximately 4.5km northwest from Kipoi Central. The prospect area is located on a regional northwest trending topographic ridge that extends from the Kileba deposit and extends beyond the Project area (Figure 7-13).

Gecamines has mapped the area as undifferentiated Roan Formation (R2 to R3) underlying younger Mwashya Formation (R4.1 and R4.2). The regional map suggests that the prospect area is located on the southewestern limb of a northwest trending anticlinal structure.

The area has been worked, in places, by artisanal miners whom exploited copper and cobalt oxide mineralisation by way of narrow shafts and stopes within the regolith zone.

Figure 7-13 View SE from the Judeira Prospect looking towards Kipoi Central and Kileba

The prospect area includes two northwest trending ridges that are 800m apart. The ridges are dominated by a northwest to southeast striking succession of pyroclastic rocks in contact with clastic sediments and carbonates. In the central area erosion has exposed a stratigraphic level in an area of at least 150m in diameter consisting of highly deformed talcose pyroclastic rock or rocks of evaporite origin.

The pyroclastic or evaporitic rocks are medium-grained and have a light-green colour in outcrop. The rocks are generally “soft” with a soapy feel and show no internal structure. There is significant compositional and textural similarity to similar rock in the stratigraphic succession logged at Kileba (Figure 7-14 E). The rocks are dominated by chlorite, serpentinite and talc, which are considered retrograde alteration products. Near the contact with the siliciclastic sediments, several apparently discontinuous and possibly en-echelon haematite lodes have been mapped. The haematite lodes range in width from less than 1m up to 10m and appear to have an upright position. The coincidence of mapped haematite lodes and a high magnetic signature as seen in the airborne magnetic map, suggests that the lodes contain magnetite at depth.

The pyroclastic rocks are in contact with a sedimentary package that includes well stratified and massive shaly siltstones. The contact appears to be sub-parallel to bedding suggesting that the contact is conformable. This is supported by observation in the central pit area near drill hole (JUDDD001). The sedimentary rocks consist of slaty fine laminated siltstones, interbedded with more massive nodular calcareous dolomitic siltstone shown in Figure 7-14, slide A and slide B. These rocks overly massive stratified red dolomitic sandy siltstones. The succession dips at about 35˚ to 55˚ to the southwest. The total sediment package is in excess of 200m wide.

The north part of the southern outcrop area shows an algal laminated vuggy silty dolomite unit intercalated at the pyroclastic and siltstone contact. This stratigraphic unit appears to be the host to significant supergene mineralisation in the area and is texturally similar to the DStrat of the R.2 sequence (The unit measures about 20 to 30m in thickness and can be traced for about 250m along strike to the northwest and is mineralised in all the artisanal workings located along it. Artisanal workings adjacent to JUDRC003 have exposed white and red-white, and in places black, soft soapy, talcose material that shows a strong ductile strain fabric shown in Figure 7-14, slide E. The talcose material contains fragments of siltstones and sandstones with rubble breccias along lithological contacts with the adjacent rocks. The talcose material occurs in a small open cut near the artisanal miner’s camp where, according to the local miners, it is exploited for its cobalt content.

An outcrop area at North Judeira is geologically similar to the area described above. The two areas of outcrop are separated by a low lying area of limited outcrop about 800m wide with rock exposures limited to a few trenches and scattered subcrop. A southwest dipping succession of pyroclastic rocks, including a very wide zone of haematite, occurs at the top of the hill near the western contact with the sediments. The sediments are calcareous siltstones and silty dolomites.

7.5.1 Structural Setting

Mapping confirms the structural framework indicated in the regional Gecamines map, which suggests that the prospect area is located on the flanks of a south-west tilted sequence of Roan sediments (Figure 7-12). The strata strikes consistently in a northwest to southeast direction, however dip angles are highly variable (Figure 7-15). This general geological setting is in places complicated by northeast striking sub-vertical faults, with oblique slickensides shown in Figure 7-14 slide D. One such fault is mapped in the central part of the southern outcrop area and appears to have a controlling effect on stratigraphy. North of the fault a mineralised stromatolitic unit has been mapped at the contact with the pyroclastic and talcose rocks whereas to the south of the fault, the sequence consists of undisturbed interbedded, shallow dipping dolomitic siltstones. The fault is associated with supergene copper mineralisation. Figure 7-16 shows a simplified composite cross section across the Judeira prospect.

Uncertainty exists over the structural/stratigraphic position of the talcose rocks, as their occurrence is limited to pits and shafts excavated by artisanal miners and has also been intersected in several RC drill holes. Current understanding is that this unit is strongly weathered, shows a strong pervasive ductile foliation texture (Figure 7-14, slide E) and is sandwiched between siliciclastic sedimentary units.

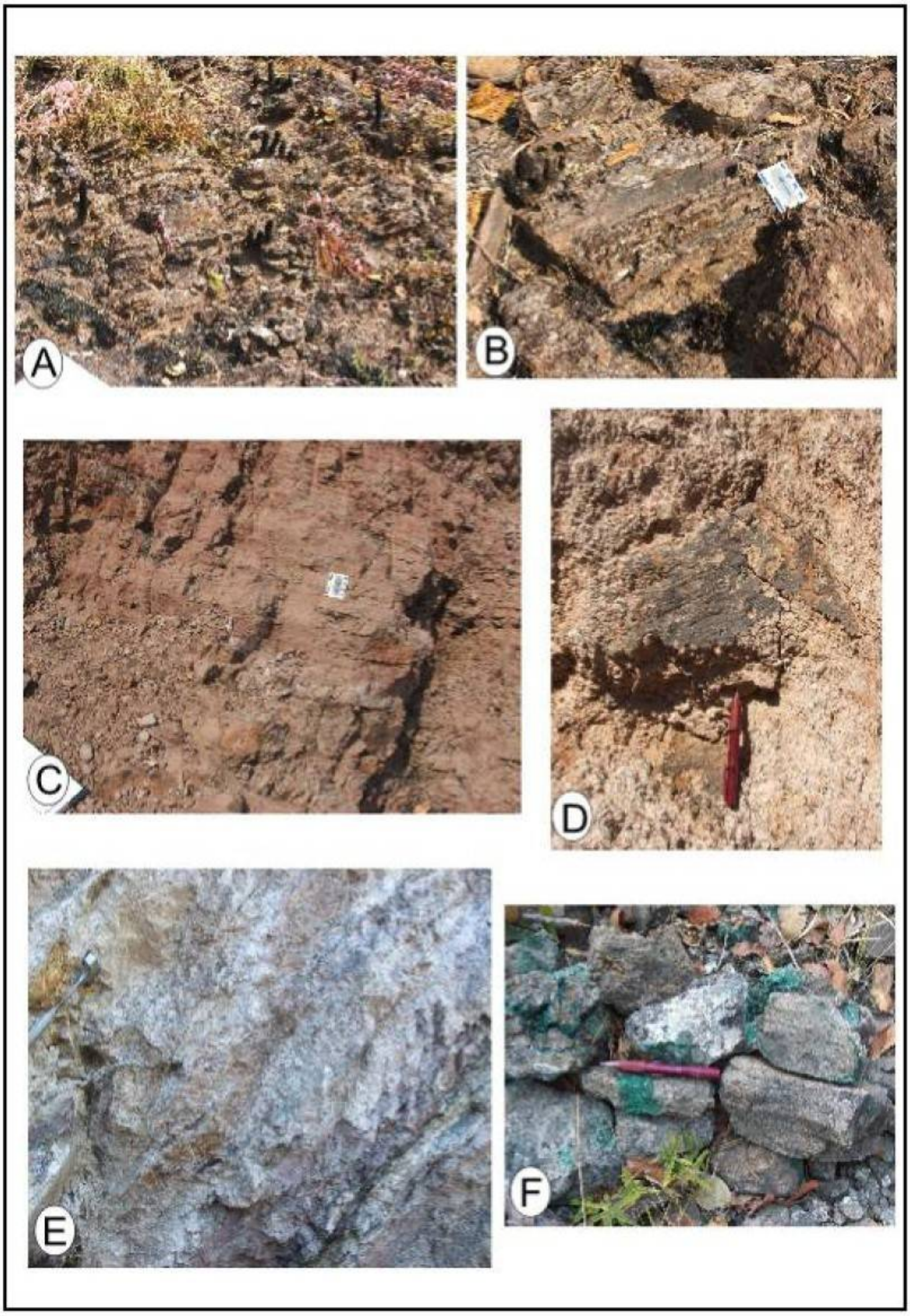

Figure 7-14 Outcrop Photographs of the Juderia Prospect

(A) and (B) interbedded siltstone and dolomitic siltstone; (C) massive thin bedded sandy calcareous siltstone; (D) Slickenside lines on fault surface; E) ferruginous talcose, strongly foliated rock; (F) algal laminated vuggy silty dolomite rock with strong secondary copper mineralisation on bedding and joint surfaces.

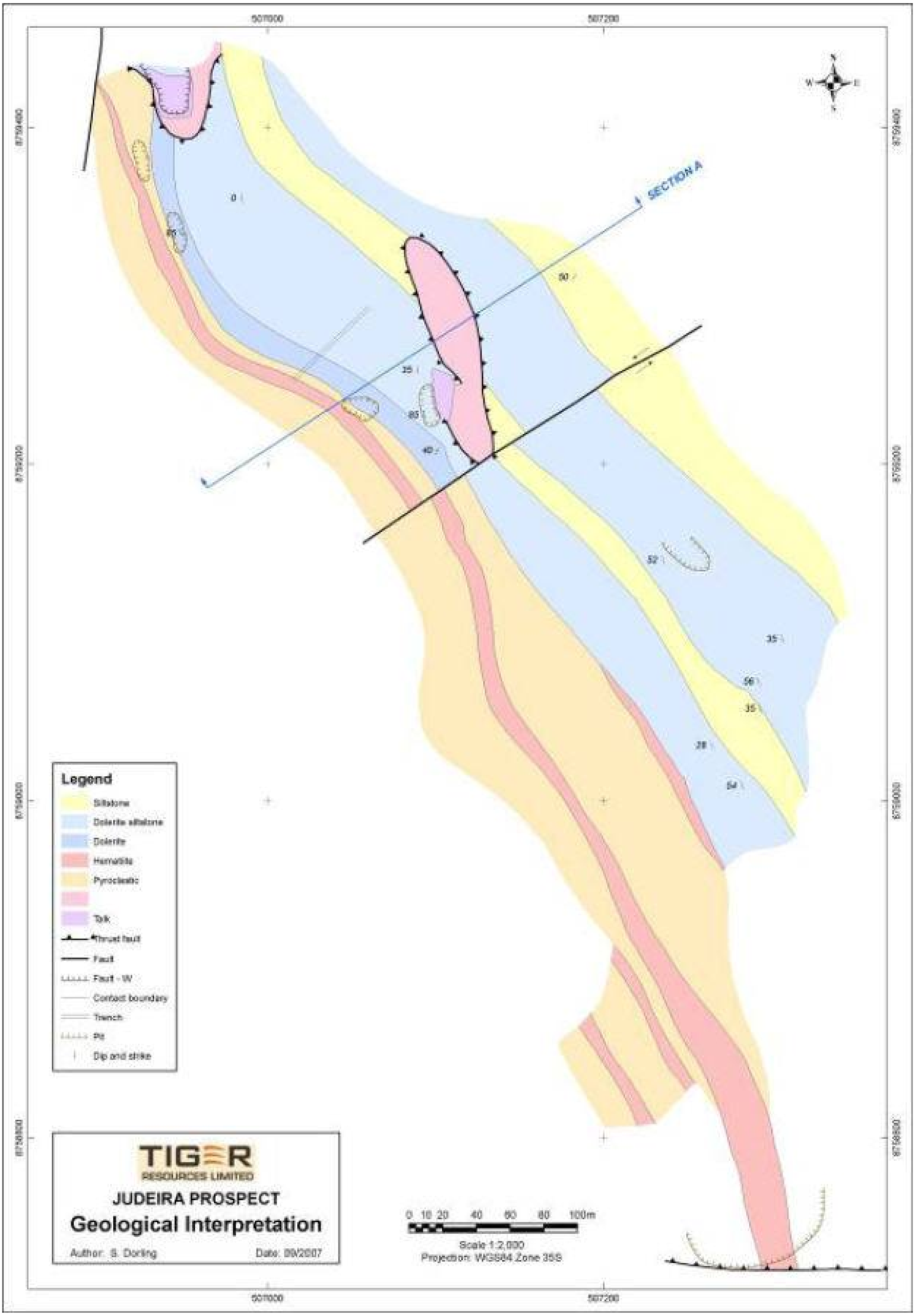

Figure 7-15 Outcrop Map of Judeira Prospect

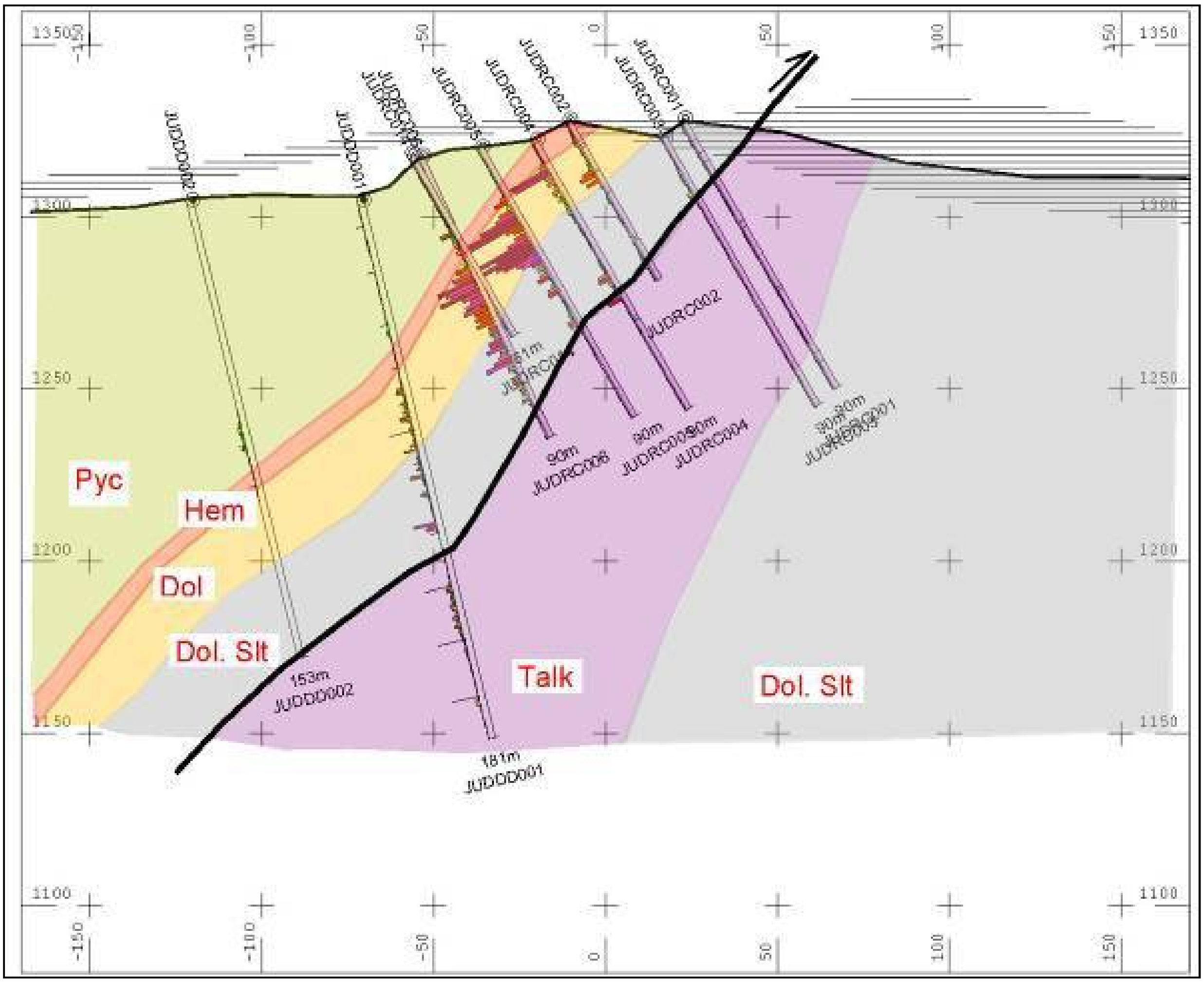

Figure 7-16 Simplified Composite Section A – Judeira Prospect

7.5.2 Geological Model

The geological model for the Judeira prospect is based on RC and AC and diamond drilling data, provided by the company. Based on the available geological information, the Judeira prospect appears relatively simple with respect to structure and mineralisation.

At Judeira, the package of rocks strike northwest at 320^0 and dips 40 to 50^0 to the southwest. From hanging wall to footwall, the stratigraphy comprises Kundelungu arenites and Upper Roan Group shales, banded iron formation, silty carbonaceous shales, silicified dolomites, pyroclastic volcanics and talcose dolomites. Two zones of mineralisation have been identified in the footwall of the banded iron formation. The main zone is hosted within the carbonaceous shale and dolomite and the second zone is hosted by the footwall talcose dolomites.

To date, a large proportion of the drilling targeted the definition of resource potential adjacent to artisanal workings.

7.6 Kaminafitwe Prospect and Local Geology

The Kaminafitwe prospect is located approximately 3.5km northeast of Kipoi Central. The prospect is defined by a few artisanal workings, and covers an area of about 200m by 80m at the base of northeast trending ridge (Figure 7-17).

The prospect area comprises an asymmetric, east to northeast trending anticline structure cored by interbedded stratified siltstones and calcareous siltstones. The northern limb of the fold is in contact with highly weathered silty shale intruded by several 1 to 4m wide mafic dykes (Figure 7-17, Figure 7-18. The dykes appear to form a dyke swarm, which is better developed near the contact with the siltstones. The shale unit is defined by grey reduced saprolitic clay, which becomes more oxidised and slightly ferruginous to the west. It shows a pervasive north to northeast trending and west to northwest dipping pervasive curved foliation, that is not present in the intrusive rocks. The dyke swarm extends over a width of approximately 40m. It is inferred that individual dykes may be discontinuous however, the zone may extend beyond the area of artisanal workings.

In the southwest of the mapped area, the sediments appear to be truncated by an east dipping fault breccia with a sliver of carbonaceous siltstones in the immediate hanging wall. The fault separates the sediments from talcose ferruginous weathered pyroclastic rocks. The fault breccia zone is several meters wide and contains supergene copper mineralisation with several small artisanal working along it.

According to the Gecamines map, the sediments are globally attributed to the Roan Group of sediments. However, given the lithological similarities between the sediments at Kaminafitwe, Judeira and Kileba, it is likely that these rocks are part of the Upper Roan Group of sediments R.3 or R.4, rather than R.2 (Mines Series) rocks.

Figure 7-17 View of the Kaminafitwe Workings Looking SE

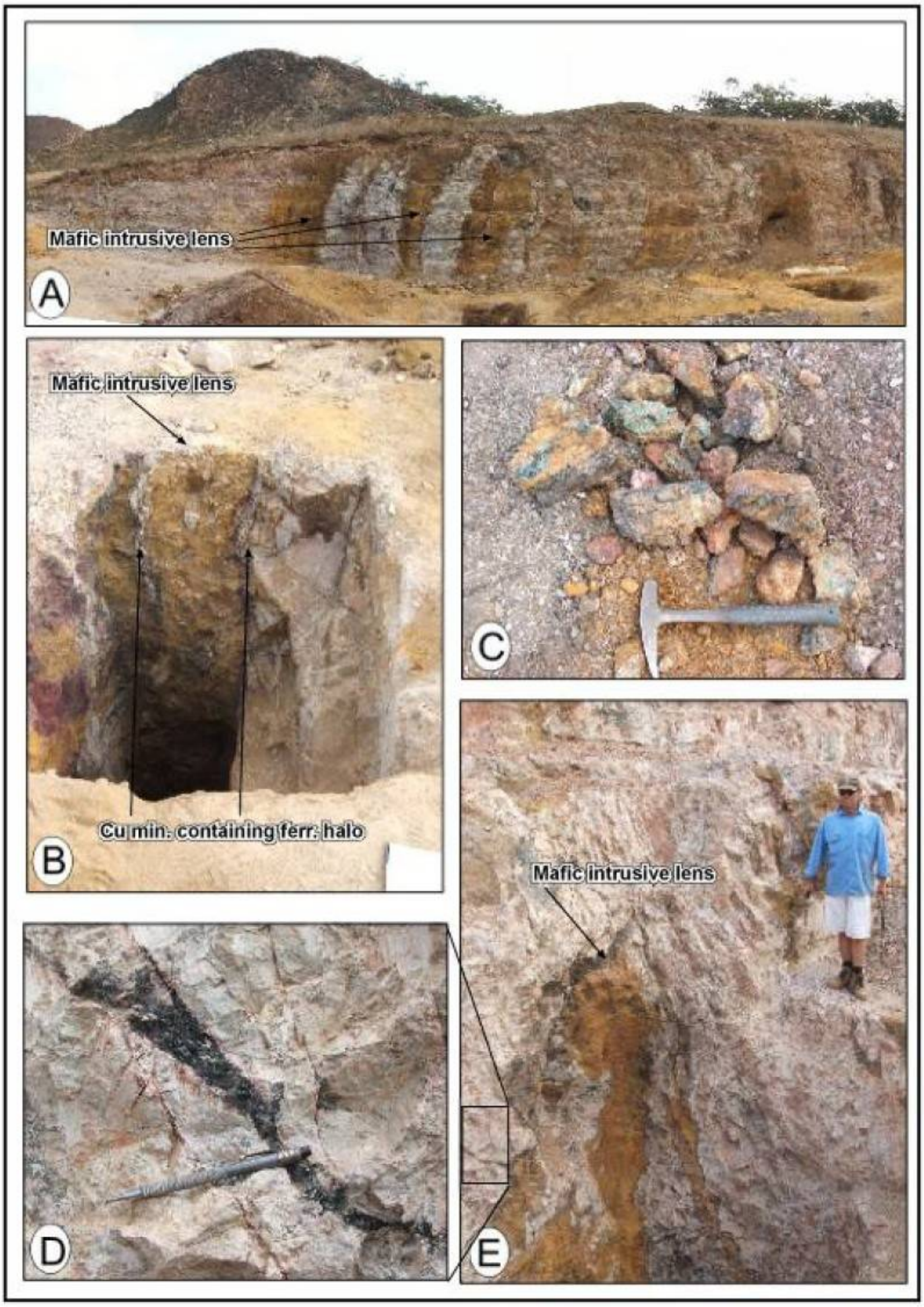

Figure 7-18 View of the Kaminafitwe Workings Looking SE

A) Kaminafitwe artisanal workings, looking SE- note shallow SW dipping strata on left hand side. B) Sub-vertical haematite lens in dolomitic siltstone, C) Mineralised fault intersection in northern outcrop area, D) Enlargement of small mafic dyke with copper oxide mineralisation branching of large dyke.
E) Overview of setting for picture D.

7.6.1 Structural Setting

Structural mapping in the prospect area shows that the mineralisation at Kaminafitwe is located on the north to northwest limb of a northeast trending anticline structure which is interpreted from strata geometry. The core of the fold or the trace of the fold axial plane is interpreted to coincide with the saddle in the ridge suggesting that it may correspond with a zone of brecciation leading to preferential weathering. Near the core of the anticline, the dip is moderately steep and becomes sub-vertical towards the contact with the shale. Towards the lithological contact, the shaly siltstone beds become increasingly foliated and sheared.

The north striking and east dipping fault mapped in the southwest of the prospect area appears to be of local significance as it forms a local stratigraphic discontinuity and also coincides with a topographic break along the western slope of the ridge. According to the Gecamines regional map, the fault broadly aligns with a narrow corridor of Roan Group sediments flanked by Kundelungu diamictites to the northwest and southeast. This narrow north trending Roan Group corridor is potentially interesting as it is sub-parallel to the northeast trending cross faults mapped at the Kipoi, Kileba and Judeira prospects. The position of Kuminafitwe in a structure that trends almost orthogonal to the principle structural trend in the area suggests that cross structures are an integral part of the deformation pattern of thenorthwest striking Lufilian fold belt. This suggests that the structural model may involve reverse faults and lateral ramps.

7.6.2 Geological Model

The mineralised zones at Kaminafitwe are located on the north to northwest limb of a northeast trending anticline structure. Mineralisation is associated with a vertical to steeply dipping mafic dyke swarm based on mineralogy and alteration. These dykes are intruding Upper Roan Group sediments, possibly R4, as they are mainly siltstones and shales. Narrow (less than a meter wide at surface) ferruginous haloes, contain supergene copper and cobalt mineralisation flanking the weathered mafic dykes. The dykes with the ferruginous zones extend over a width of up to 40m and along strike for several hundred meters. RC drilling has identified some of the mineralised zones continuing to vertical depth in excess of 120m and in some cases appears to widen with depth.

A fault further to the south truncating the R4 sediments contains supergene copper mineralisation exposed in artisanal working along it. This structure has not been drilled and the actual extent of mineralisation is unknown.

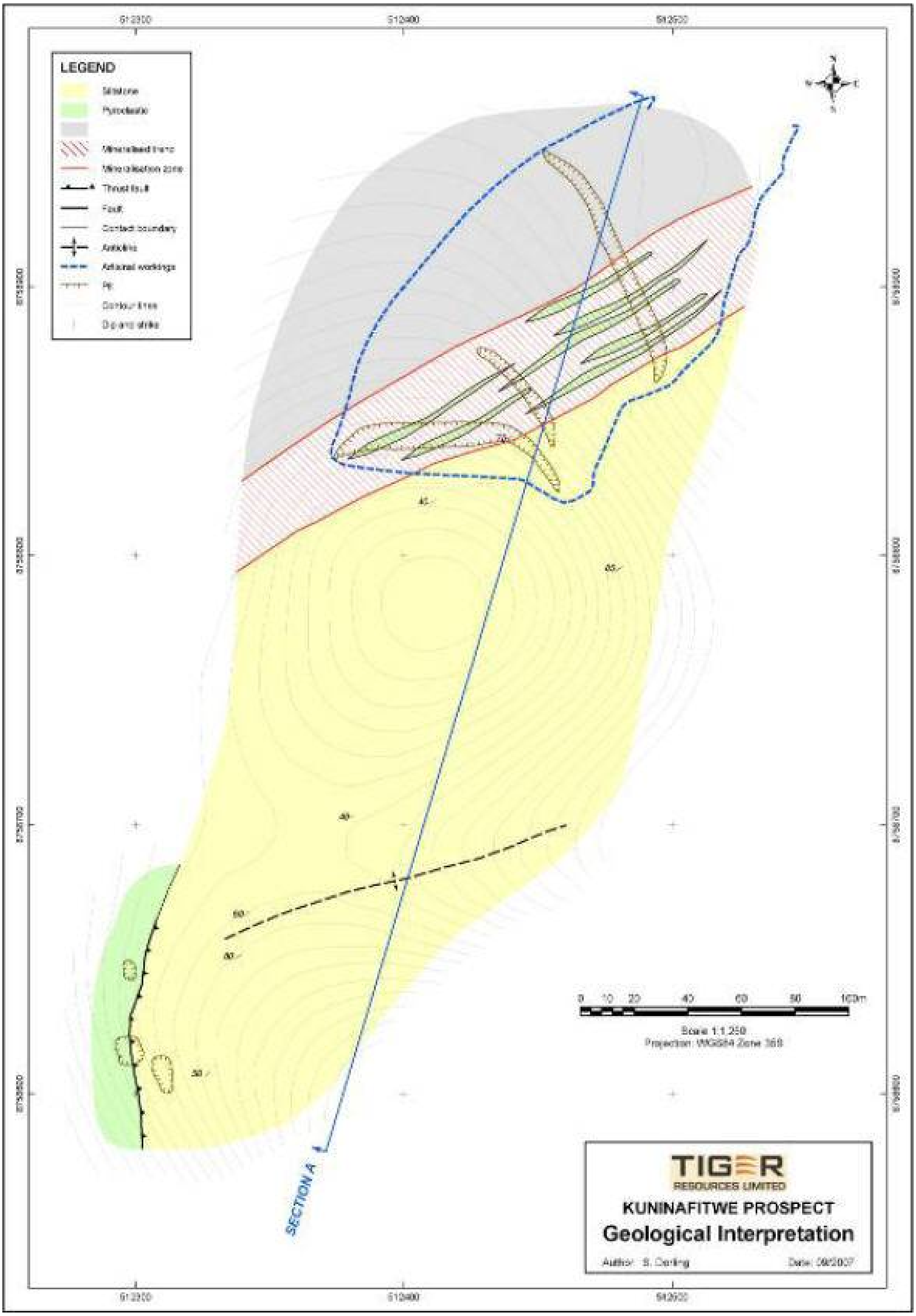

Figure 7-19 Outcrop Map of Kaminafitwe

7.7 Mineralisation

7.7.1 Kipoi Central

Copper mineralization at all of the Kipoi and the Kileba deposits is the result of several geological processes. As is the case with most other Congolese copper deposits the economic value strongly enhanced through the secondary enrichment and oxidation of primary sulphides in the weathering zone of the regolith profile.

At Kipoi Central, the bulk of the mineralization is hosted in brittle and brittle-ductile settings in dolomitic siltstones and dolomites of the upper R4 sediments. Observations from non-oxidised core show mineralization commonly occupies cross cutting and bedding parallel veins but is also present in the matrix of crackle, mosaic and rubble breccias of a tectonic origin. Stratiform mineralization appears to be occupying sedimentary rock porosity and appears to be deformed by subsequent sediment compaction during lithification. The textures related to soft-sediment deformation and suggest syn- diagenetic mineralization. Copper bearing veins in the primary zone include chalcopyrite and pyrite with quartz-calcite as gangue minerals. These veins are interpreted to have resulted from re-mobilisation of stratiform mineralisation. However, these late stage veins are compositionally slightly different from the bedding-parallel veins, which contain exclusively chalcopyrite.

Deep weathering, oxidation and remobilisation of copper have subsequently affected the primary setting. The predominant copper bearing mineral at the Kipoi Copper Project is malachite. Minor azurite pseudomalachite, chalcocite, bornite, native copper and chalcopyrite are also present. Oxide mineralization occurs partly as in situ replacement of stratabound sulphides, as coatings on bedding, cleavage and joint surfaces, and as minor cavity infill mineralization. The effect of this is that mineralization is dispersed over a much larger rock volume than in the original primary sulphides.

Mineralisation is localised and enhanced near faults. These commonly show strong enrichment of mineralization in the fault matrix which gives way laterally to mosaic and simple vein style mineralization. The pattern structural focal points for ore fluid remobilisation is observed repeatedly throughout the Upper R4 sediments at Kipoi Central.

The origin and style of cobalt mineralization is more difficult to distinguish and interpret. Significant cobalt mineralization appears to be localised near the footwall contact of the Upper R4 sediments and the Lower R4 pyroclastic rock. It occurs in a black talc rich, soft mass of material that ranges in width up to several tens of meters. While no cobalt minerals were recognised, however, it is assumed that the cobalt bearing mineral is heterogenite.

Mineralization is generally not present in the *breche heterogene*, however, the breccia in the contact zone with the R4 sediments tends to well mineralised. The overlying tillites show localized copper-oxide bearing clasts in a sandy matrix. This suggests that primary mineralization predates the deposition of the tillites and that mineralisation bearing strata was eroded at the time of the tillite formation. Copper-bearing veins occur in brittle fractures that cross cut the tillite R4 contact implying a prolonged deformation event occurred

The above documented observations suggest that primary copper mineralization at Kipoi Central is syn to epigenetic in its origin with regard to the host rocks (R4) and to a high degree structurally controlled.

An interpreted geological and mineralization model as well as an interpretation of the current geological setting for the Kipoi Central prospect is shown in Figure 7-5. The block model illustrates the steeply dipping nature of the R4 sediments, with the disconformable contact with the underlying *breche heterogene* and unconformable contact with the overlying tillites.

Mineralization is associated predominantly with the Upper Roan (R4) sediments. Some mineralization occurs in the pyroclastic rocks within deformation related settings with structure interpreted to be the predominant control on mineralization.

7.7.2 Kipoi North

The style of mineralisation at Kipoi North differs from that at Kipoi Central. The mineralisation at Kipoi North, is predominantly secondary, stratabound and concentrated in the DStrat, RSF, and RSC units of the R2. In the DStrat, malachite occurs parallel to the thin laminated, silty dolomite layers. In the RSF, mineralisation occurs pervasively within the slaty layers of the rock, while the mineralisation in the RSC is associated with the dissolution vughs, veins and fractures that occur immediately and up to several tens of meters above the contact with the RSF. In KPN003, native copper was intersected between 99m and 110m.

The style of mineralisation at Kipoi North is typical of the predominant style of mineralisation in the Congolese Copperbelt Copper mineralisation in the DStrat, RSC and RSC is interpreted to correspond to the Lower Orebody (Cailteux et al., 2005).. The extended occurrence of mineralisation at Kipoi North is attributed to the secondary re-distribution of mineralisation from a a much tighter primary source. The RSC is generally not a major host to mineralisation, although its footwall contact with the RSF and the hanging wall contact with the silty dolomite can be mineralised (Cailteux et al., 2005).

Cailteux et al., (2005) emphasise the significance of depositional facies in the localisation of copper mineralisation. From the regional work it is recognised that a strong positive correlation between reefal stromatolitic rocks and copper mineralisation, versus a weaker mineralisation association with arenitic rocks along strike of the Lower Orebody host. The stromatolitic nature of the RSC at Kipoi North may represent a favourable setting.

7.7.3 Kileba

Mineralisation at Kileba localised within two northwest striking and southwest dipping zones, referred to as the Kileba South deposit and the Kileba North deposit. The two occurences are separated by a north trending fault, and both deposits exhibit differing grade tenor. However, both deposits are considered to have been connected and formed by one continuous, deeply rooted zone of deformation and mineralisation (Figure 7-10). The Kileba South deposit exhibits a broad zone of supergene copper enrichment in the hangingwall of a mineralised shear zone, where brittle deformed rocks adjacent to a reverse fault have generated a favourable setting for primary and supergene enrichment.

The fault hosted mineralisation is located in the a cross cutting vein network in the hanging wall of the fault and in the matrix of a brittle, rubble breccia with a distinct fault gouge in the footwall. The veins contain quartz-carbonate and chalcopyrite. The brittle mineralisation setting overprints stratiform and strata bound, in places, massive sulphide (pyrite and chalcopyrite) mineralisation. Primary stratiform mineralisation occurs at several stratigraphic level and is commonly associated with graphitic, dolomitic shales and silicified, algal stromatolitic beds.

Kileba South is a structurally controlled copper ore body, dipping steeply to the southwest with a strike length of 730m. The mineralisation includes copper sulphide mineralisation below the base of oxidation and copper oxide mineralisation above it. The depth of weathering is to about 120m vertical depth below surface. At depth, the sulphide mineralisation is structurally controlled and hosted by a regional northwest trending fault breccia. Above the base of oxidation, weathering of sulphides has led to lateral dispersion of secondary copper minerals, generating a supergene blanket 700m long by up to 130m wide, and 120m deep. The majority of the reported Mineral Resource resides within the oxide profile.

Kileba North is interpreted to be a continuation of the structurally controlled Kileba South copper mineralisation, dipping steeply to the southwest with a strike length of 650m. Mineralisation has currently been interpreted to a vertical depth of 110m, but to date has not been modelled below the base of oxidation weathering profile. A supergene blanket of mineralisation is not interpreted with mineralisation open at depth and along strike to the northwest.

7.7.4 Judeira

Copper mineralisation appears to be located within fractured, fine laminated, vuggy, possibly stromatolitic silty carbonates in direct hanging wall contact with the pyroclastic rocks, forming a distinct structural stratigraphic target. In the footwall, the mineralisation appears to terminate against the highly talcose rock. The location of mineralisation indicates proximity to planes of deformation with the copper mineralisation mapped at Judeira being malachite and supergene in origin.

The copper hosting rock unit has only been observed in the centre of the southern prospect area. While the unit shows very encouraging mineralisation and favourable rock textures, the primary source of mineralisation remains to be determined.

Northeast trending structures appear to be terminating or offsetting structures.

Mineralisation in the northern part of the prospect shows similar structural and stratigraphic characteristics. It occurs in strongly oxidised and leached, deformed dolomitic siltstones in proximity to the strongly sheared pyroclastic contact. The artisanal miners are exploiting a soft black talcose material believed to be cobalt mineralisation.

7.7.5 Kaminafitwe

Copper oxide mineralisation at Kaminafitwe is located in the ferruginous haematitic contact aureole surrounding the mafic intrusions. Artisanal miners extracting the highly ferruginous seams surrounding the intrusive material mine supergene copper mineralisation. It has not yet been established if the dykes like intrusions are of mafic composition although internal structure, mineralogy and oxidation suggest that this interpretation is correct. In addition, the spatial association of copper with these intrusive bodies is not necessarily genetic. It is possible that early diagenetic mineralisation in the sediments has been remobilised and re-precipitated at a geochemical boundary being the mafic sediment contact. Irrespective of genetic processes, significant copper mineralisation seems to be coincident with areas of increased density of dykes.

8.0 DEPOSIT TYPES

The stratiform Copperbelt copper-cobalt deposits occur predominantly in the Roan Group (Mines and Mwashya Subgroups, (Figure 8-1). The Roan Group sedimentary rocks display a regional lateral facies variation between the Zambian and the Congolese succession. In Zambia and the SE Congo the deposits are hosted in clastic rocks (conglomerates, sandstones, shale) close to the basement terrains. The Congolese copper-cobalt deposits and their host rocks define alochtonous bodies formed during the Lufilian Orogeny with the dominant lithological units being dolomites and dolomitic shales.

Major primary deposits and most primary copper occurrences are stratigraphically controlled (Figure 8-1, Figure 8-2), i.e. they occur in the Kamoto Dolomite and Dolomitic Shales Formations of the Mines Subgroup in Congo), and in lateral correlative units known as the Ore Shale Formation (Binda and Mulgrew, 1974; Cailteux et al., 1994) at the base of the Musoshi Subgroup in Zambia. Within these lithostratigraphic units, the orebodies extend for hundreds of metres to several kilometres (e.g. Dikuluwe-Mashamba at Kolwezi; Luanshya in Zambia) along strike, except where they are interrupted by compressional structures related to the Lufilian orogeny (Kampunzu and Cailteux, 1999). The lateral variation of sulphides in the orebodies shows copper rich zones grading into copper poor zones and to pyritic barren zones. Some copper and cobalt primary sulphide mineralisation occurs in the Mwashya Subgroup in Congo, and also are stratigraphically controlled in dolomites of the Lower Mwashya.

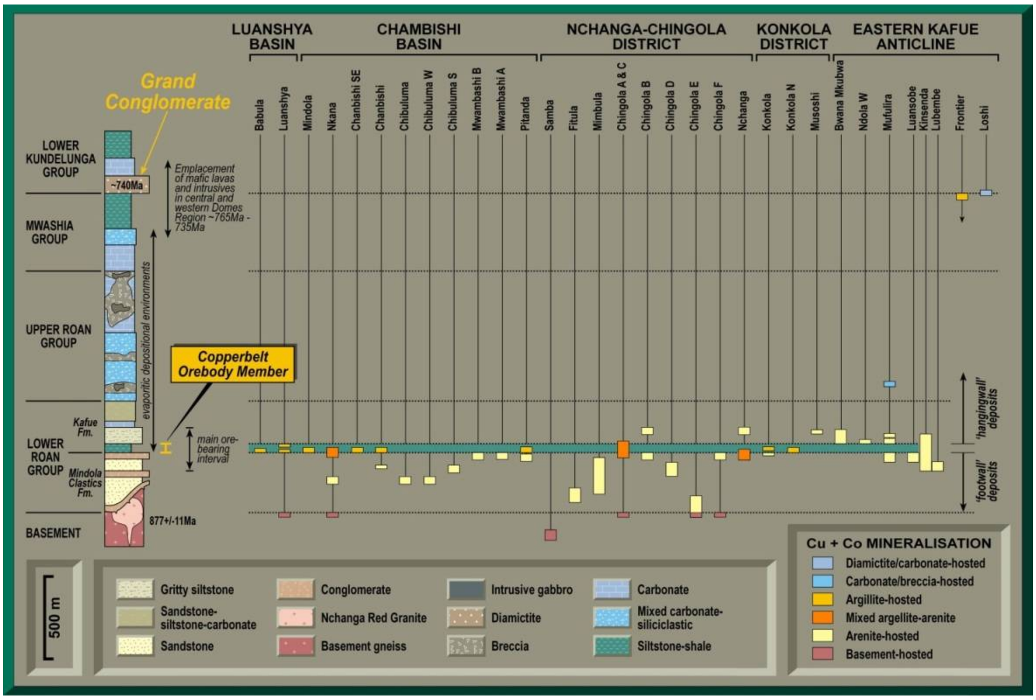

Figure 8-1 Lithostratigraphic Distribution of Major Copper Deposits in Zambia

Note: The majority of Zambian deposits are located at the redox boundary formed by the oxidised sandstones and arkoses and carbonaceous shales (Figure 8-1).

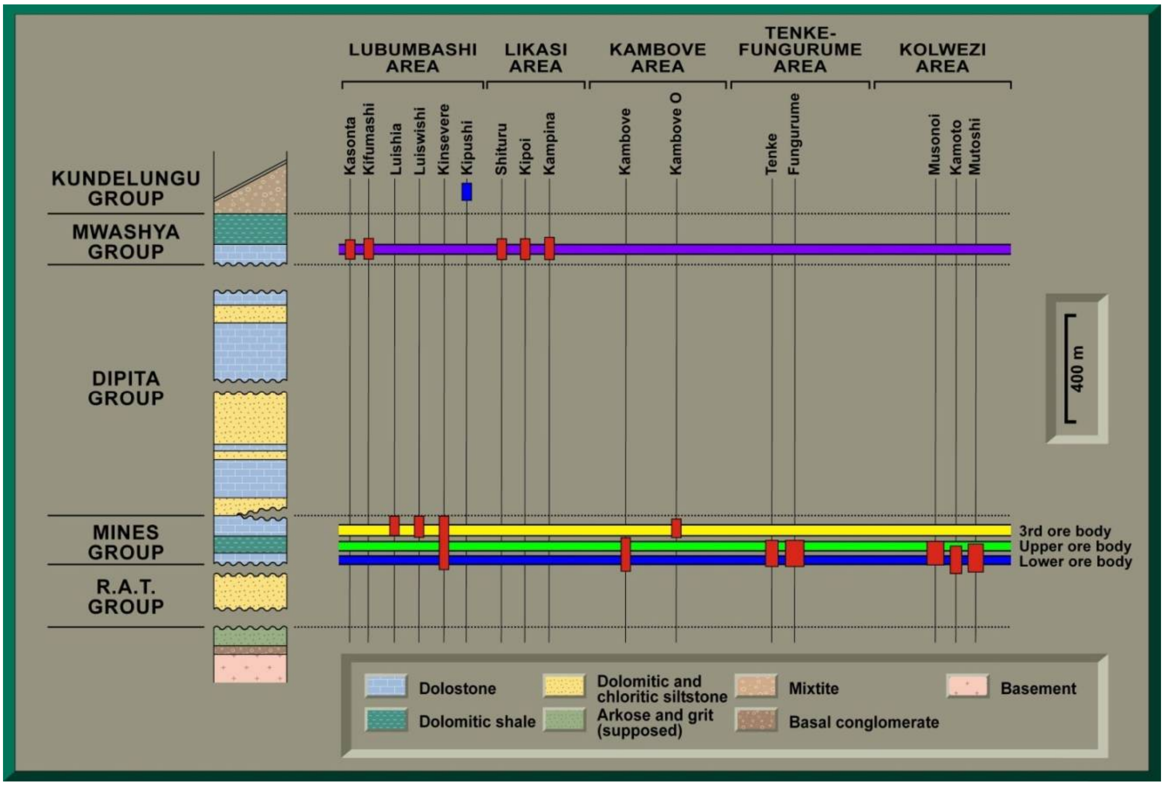

Figure 8-2 Lithostratigraphic Distribution of Major Copper Deposits in the DRC

Note: Carbonaceous dolomitic shales of the Mines Group (Figure 8-2) hosts the majority of deposits in DRC.

The Congo-type stratiform deposits stretch from Kolwezi up to Kimpe (Figure 8-2) and are generally characterised by two major copper/cobalt zones, being the ‘‘lower’’ and ‘‘upper” orebodies, totalling 15 to 55m cumulative thickness (average 20 to 25m). The mineralisation is hosted in a transgressive supratidal to subtidal sedimentary sequence deposited under quiet, shallow water conditions. The host rocks contain blebs, nodules and lenticular beds of dolomite–quartz pseudomorphs after anhydrite and gypsum, and high contents of Mg, Ba, Sr, Li, B, Br can be linked to the deposition of sediments under saline evaporitic conditions.

The lower orebody host-rocks include (Figure 8-2): (1) a massive chloritic–dolomitic siltite known as Grey R.A.T. (‘‘**Roches Argilo-Talqueuses’’**); (2) a fine-grained stratified dolostone known as D.Strat. (‘‘**Dolomie Stratifie**´’’); (3) silicified stromatolitic dolomites forming laminites alternating with thin chloritic–dolomitic silty beds known as R.S.F. (‘‘**Roches Siliceuses Feuilletees**’’). The upper orebody host-rocks include: (1) the basal dolomitic shales known as S.D.B. (‘‘**Shales Dolomitiques de Base’’**) and also called S.D.1a; (2) an overlying coarse grained impure dolostone known as B.O.M.Z. (‘‘**Black Ore Mineralised Zone’’**) and also called S.D.1b, which is sometimes missing in the succession (e.g. in the Kambove area). A generally ‘‘barren’’ reef-type stromatolitic dolomite known as R.S.C. (‘‘**Roches Siliceuses Cellulaires**”) occurs between the two orebodies. In some deposits (e.g. Kambove - Ouest), the primary stratiform mineralisation extends to the overlying carbonaceous dolomitic shales S.D.2a, up to the base of the S.D.2b. The organic matter content is variable, generally low, although local high contents have led to the development of black shales and dolomites in R.S.F., R.S.C., and S.D.B units.

The Congo-type mineralised succession is very regular along strike (Figure 8-2), showing the same lithological succession for greater than 350km, from Kolwezi (Demesmaeker et al., 1963; Francois, 1973; Katekesha, 1975), to Tenke-Fungurume (Oosterbosch, 1950, 1951), Kambove-Kakanda (Cailteux, 1978a, 1983), Kabolela (Lefebvre, 1976a,b), Etoile (Lefebvre and Cailteux, 1975) and Lubembe (Lefebvre and Tshiauka, 1986; Tshiauka et al., 1995).

Sub-economic deposits, generally (<1% Cu) and small economic deposits locally (>2% Cu), occur in dark grey to black carbonaceous metapelites forming the S.D.2d and 3b. However, the metals in these units are strictly bound to thin organic matterrich horizons indicating deposition under strong reducing conditions. Other economic to sub-economic copper/cobalt mineralisation in the Menda and Luishia facies (e.g. Kambove-Ouest, Luishia, Luiswishi) are hosted stratigraphically higher up in the Kambove Formation (upper part of the Mines Subgroup), 60–100m above the classical upper orebody described above.

For clarity, the small orebodies in the Kambove Formation are the third Congo-type orebody. The stratiform disseminated sulphides of this third orebody type (4 to 20m thick, 10 to 100m long) are hosted in tidal and reef lithologies similar to the host rocks in the lower and upper orebodies (Cailteux,1978b, 1994). However, the host rocks are this time part of a regressive sequence.

The Mwashya Subgroup is exposed for several hundred kilometres along major Lufilian thrust faults between Kolwezi to the west and Kimpe to the southeast (Figure 8-2). Several copper deposits and sub-economic occurrences (<1% Cu) were recorded in the Lower Mwashya (e.g. Shituru and Mulungwishi-Kampina (Likasi district), Kipoi (Luishia district), Kifumashi and Kasonta (Lubumbashi area). The distinct stratigraphic and lithological position of these deposits, although representing only a small part of the overall contribution to the metallogenic content of the Congolese Copperbelt, further illustrates the size and extent of the mineralisation system.

9.0 EXPLORATION

Tiger has focused its exploration activities on testing the copper and cobalt mineralization exposed at the five known mineral occurrences and on the definition of additional regional exploration targets within the Kipoi Project area. Exploration activity undertaken to date includes channel sampling of known adits, trenches and exposures, regional soil sampling by TIGER and geological mapping by CSA Global Pty Ltd on a 1:1000 scale over all the prospects.

An initial exploration RC drilling program was carried out at Judeira and Kileba in September 2006. DC drilling was undertaken at Kipoi Central between December 2006 and November 2008, with DC, RC and AC drilling undertaken on selected areas within the Kipoi Project during 2007 and 2008. Detailed metallurgical testwork was completed on diamond drill core collected from Kipoi Central.

Various exploration programs have been designed for the Kipoi Copper Project in 2011-2012, they include resource upgrade and expansion drilling at Kipoi Central, Kipoi North and Kileba, resource/exploration drilling at Kaminafitwe, Simba Hills and Kipoi South with the last two being regional geochemical targets. Regional soil sampling to cover the remainder of the Kipoi Copper Project tenements will be completed. A budget summary for the planned work is shown in Table 26.1.

9.1 Kipoi Central Prospect

9.1.1 Exploration Work Program

CSA Global Pty Ltd undertook geological mapping on a 1:1000 scale over the Kipoi Central prospect area. The work completed included outcrop and pit mapping as well as DC logging. This resulted in a more detailed understanding of the lithology, structure and mineralization and has resulted in a revised geological model for Kipoi Central. This model suggests the mineralization is structurally controlled and influenced by the competency of the different rock units, with most mineralization localised in fractures, bedding planes and voids.

3382 soil samples were collected in late 2006 as part of a regional soil sampling campaign across the main mineralised corridor between Kileba and Judeira. This program also covered the Kipoi Central prospect. All samples were analysed using an in-house XRF Niton analyser. Samples at Kipoi Central were taken on a 50m by 25m grid, with a 50m by 200m sample spacing outside the area of detailed sampling.

The Kipoi Central grid was orientated eastwest, with the area being sampled extending 1.6km eastwest and 1km northsouth. A distinct soil anomaly >750ppm copper was defined surrounding the entire Kipoi Central prospect with an east to west extent of approximately 1km and a north to south extent of 850m.

9.1.2 Prospect Prospectivity

Mapping and logging of the drillcore at Kipoi Central has confirmed that structure and lithology are important indicators for ongoing exploration with the prospectivity for mineralization enhanced if the structures occur within the dolomitic siltstone facies. Structural settings in pyroclastic rock should also be carefully assessed for their potential. Furthermore, it is suggested that structures trending in a northerly direction ± 20˚ are likely to be dilatant in an overall northeast directed compressional environment that occurred during the Lufilian Orogeny, with these structures considered potential trap sites for mineralization.

Follow-up drilling of the exploration results to the west of the Kipoi Central is warranted and has been recommended as being prospective for the delineation of further mineralization. This area will be the focus of a 3500m DC drilling program in 2011, the program will infill existing drilling to firm up the Mineral Resource estimation and extend some sections to the west toward the main northerly trending mineralised regional fault.

Kipoi Central shows high prospectivity for structurally controlled high grade copper mineralization. The irregular occurrence of the Breche Heterogene, can terminate the prospective R4 rocks very abruptly.

9.2 Kipoi North Prospect

9.2.1 Exploration work program

CSA Global Pty Ltd undertook geological mapping on a 1:1000 scale in the main area of exposed workings at Kipoi North. The mapping identified a possible overturned, north dipping package of Lower R2 Mine Series sediments containing moderate copper oxide mineralization, being mainly malachite. Structurally the R2 package is interpreted to be a raft of R2 sediments floating within Breche Heterogene localised along a major thrust.

A program of soil sampling was completed on the prospect in late 2006 as part of a regional soil sampling campaign across the main mineralised corridor between Kileba and Judeira. All samples were analysed using an in-house XRF Niton analyser. Sample spacing at Kipoi North was 50m along 200m spaced north south oriented lines and covered 1.8kms of east west strike. The survey defined a soil anomaly >300ppm copper with a peak Niton value of 813ppm copper centred on the main artisanal working. This >300ppm copper anomaly had an east west strike of approximately 1km.

9.2.2 Prospect Prospectivity

The Kipoi North Prospect area is prospective for copper and cobalt mineralization for the following reasons:

- The prospect area is underlain by the regionally prospective R2 sequence of rocks, which hosts other resources in the Congolese Copperbelt;
- The style of mineralization is similar to the style of mineralization seen elsewhere in Congolese Copperbelt, and
- Drill holes that intersected mineralization in the R2 sequence have indicated continuous copper oxide mineralization.

9.3 Kileba Prospect

9.3.1 Exploration work program

In November 2006, the Kileba prospect was covered by the regional soil sampling program that was undertaken over prospective areas of tenement PE533. All samples were analysed using an in house XRF Niton analyser.

In early March 2007, the prospect area was geologically mapped.

9.3.2 Prospect Prospectivity

Mineralization at Kileba occurs within two northwest striking and southwest dipping zones of mineralization, named the Kileba South deposit and the Kileba North deposit. The two mineralised areas are separated by a north trending fault, with both the areas showing different grade tenor. The two areas are interpreted to be connected by one continuous, deep zone of mineralization. The Kileba South deposit exhibits a broad zone of supergene copper enrichment to the hangingwall of the mineralised shear zone, where brittle deformable rocks adjacent to a deformation surface have acted as a favourable setting for supergene enrichment.

Kileba South is a structurally controlled copper zone, dipping steeply to the southwest with a strike length of 73m. The mineralisation includes copper sulphide mineralization below the base of oxidation and copper oxide mineralization above it. The depth of weathering is approximately 120m vertical from surface. At depth, the sulphide mineralization is structurally controlled and hosted by a regional northwest trending fault breccia. Above the base of oxidation, weathering of sulphide has led to lateral dispersion of secondary copper minerals, generating a supergene blanket 700m long by up to 130m wide, and 120m deep. The majority of the reported Mineral Resource occurs within the oxide profile.

Kileba North is interpreted to be a continuation of the structurally controlled Kileba South copper mineralization, dipping steeply to the southwest with a strike length of 650m. Mineralization is interpreted to a vertical depth of 110m, but to date has not been modeled below the base of the oxide weathering profile. Mineralization is open to depth and along strike to the northwest.

9.4 Judeira

9.4.1 Exploration Work Programme

CSA Consulting Pty Ltd undertook geological mapping on a 1:1000 scale in the main area of exposed workings at Judeira. In the southern area, mapping identified a south west dipping, 200m thick sequence of Roan sediments comprising pyroclastic volcanic rocks, dolomitic and talcose sediments. In the northern part of the main workings, the geology is very similar with a very thick layer of hematite occurring along the western contact at the top of the sequence. Most of the rocks here occur as calcareous siltstones and silty dolomites.

3382 soil samples were collected late 2006 as part of a regional soil sampling campaign across the main mineralised corridor between Kileba and Judeira. This program also covered the Kipoï North Prospect. All samples were analysed using an in-house XRF Niton analyser. Sample spacing at Judeira was 50m on 200m line spacing, with the grid oriented north south. The sampling grid extends from the north western corner of the prospect to Kipoï Central, 7km to the southeast.

The results of the soil sampling has defined a distinct north westerly trending Niton soil anomaly (>300ppm Cu) following the main stratigraphy for 1.6km, with a peak value of 887ppm in the vicinity of the main workings. The soil sampling is supported by the geological mapping, with the copper anomaly (>300ppm Cu) coincident with the semi-continuous package of Roan sediments trending in the northwest direction. The mapping and soil sampling has assisted with the orientation of the AC drilling program.

A second campaign of soil sampling to infill lines over the Judeira prospect was initiated in October 2012. The original program covered two blocks being the Judeira Main block where the sampling in filled previous soil lines to 100m x 50m covering the area of drilling and extending the line to the north and south and the Judeira East block which covered an area east of the historic drilling. A total of 1024 soil samples were collected up to the end of 2012 being over 50 line kms of sampling**.** The program is still in progress on a 100 m x 100m grid spacing in the SW of the historic drilling.

The soil samples are taken from the base of an approx. 30 cm deep pit, dried naturally and then sieve at 150 µm mesh before being analysed using an in house XRF Niton instrument.

The sample number and coordinates for each sample are recorded in a database.

9.4.2 Prospect Prospectivity

The Judeira area shows favourable lithological, structural and mineralisation characteristics that would suggest further exploration potential exists in the area. However the continuity of mineralisation remains uncertain because of local structural modifications and a lack of outcrop over significant parts of the prospect area. The southern and northern parts of the outcrop area are separated by a low lying area (~700m in length) of colluvial cover which will require drill testing to assess its potential. Similarly, the area to the south of the northeast trending fault should be tested to ascertain exploration potential.

The structural stratigraphic settings in association with epigenetic deformation, suggest that discontinuities in the trend of faults are favourable exploration targets. These areas can be interpreted from outcrop mapping and magnetic data.

9.5 Grid Soil Sampling Method

This section detailing the Kipoi Copper Project soil sampling methods and approach, has been extracted from the CSA NI43-101 Technical Report dated July 2010. Sources of information have not been referenced individually. No additional drilling and sampling relevant to the Mineral Resource estimates reported in this June 2011 Technical Report have been undertaken since the previous CSA NI43-101 Technical Report dated July 2010.

The soil sample program was designed on 200m line spacing by 50m sample spacing, originating in MapInfo and covering the main mineralised corridor from Judeira to Kileba. Most of the sampling was conducted on a north-south grid with the exception of the Kipoi Central area where sampling was conducted on an east-west grid, perpendicular to the local geology. The sample spacing at Kipoi Central was closer spaced being 50m line spacing by 25m sample spacing in some areas.

The samples were collected using pre-designed GPS coordinates and all information recorded on data log sheets including outcrop, vegetation, soil colour, soil depth and slope direction. A 2kg samples were taken below the A horizon approximately 40cm below surface and placed into plastic sample bags and cable tied. Samples were then air dried at the base camp and split into a 500g sub-samples. The sub-samples were sieved to <2mm with 100g collected into re-sealable plastic Niton bags and submitted to the Lubumbashi Exploration office where they were analysed by XRF Niton.

CUBE considers the sample spacing and methodology utilized is industry standard, designed to generate a representative anomaly for first pass exploration. The soil sampling has outlined the known main mineralized corridor that is currently being investigated.

10.0 DRILLING

This section, detailing the Kipoi Copper Project Drilling and Sampling for drilling undertaken to the end of 2012.

10.1 Drilling Methodology

DC drilling at Kipoi Central, Kipoi North and Kileba South was initially contracted to Capital Drilling, an experienced drilling company based in Australia and Ox Drilling, a reputable company based in Zambia. The DC drilling equipment was appropriate and adequate for the task. Limited RC drilling was utilised to define the shallow mineral resource within the artisanal workings.

During 2011 and 2012 drilling was undertaken by Sinodrill, a Chinese operated entity, as well as Gefor, a Congolese (DRC) enterprise with experience and skills which is mainly gained operating in the DRC. For a minor amount of DC holes, a Tanzanian company, JICL, was also involved in the drilling program of 2012. At Kipoi Central, Kipoi North and Kileba South drill sites required establishment by utilising a bulldozer. The drill pads were initially sited using a GPS prior to clearing. The collar position was re-established using a GPS prior to the drilling.

At Kipoi Central DC holes were completed using a variety of core sizes. Core recovery in the mineralised zone has been variable and has at times resulted in DC holes being twinned using a larger core size. Consequently, HQ3 and PQ3 core size is now standard in the oxide/transition profile.

At Kipoi North and Kileba South, DC holes were nominally HQ3 size being started PQ, followed by HQ, then NQ if necessary.

Down hole surveys were undertaken using a Ranger single shot or equivalent instrumentation with a reading taken every 30m down the DC hole.

Upon completion of the hole, the “as drilled” collar coordinates were established by a licensed surveyor using established survey control and a total station.

Once the site was vacated, a small cement pad sealed the drill collar with the drillhole name inscribed for future reference.

10.2 Drilling Programs

10.2.1 Kipoi Central

A limited quantity of AC drilling was undertaken at Kipoi Central, with two lines drilled at the base of the hill to the north of the main mineralization, to test for possible R4 units extending to the north under cover. These AC holes intersected the Breche Heterogene indicating the termination of the R4 mineralised package at the north of the Kipoi Central deposit.

By December 2008, TIGER had completed 136 DC holes totaling 23,877m, 21 RC holes totaling 2,219m and 23 AC holes totaling 744m at Kipoi Central. The focus of this drilling was to define mineralisation such that Mineral Resource estimates could be undertaken to the level of confidence required for mining studies.

For the purposes of conducting mining studies an area designated the Area of Interest (“AOI”) was defined as the area of high grade mineralization at Kipoi Central that was to form the first three years of planned production. Infill drilling had generally reduced the drill spacing to a grid of 25m by 25m over the AOI.

At Kipoi Central, 136 DC holes and 21 RC holes were utilised for the Mineral Resource estimate. Drilling was undertaken on east west lines, primarily on a 25m by 25m and 50m by 50m collar spacing, increasing to 50m by 30m and 80m by 50m at depth.

AC drilling was completed in areas adjacent to the main Kipoi Central mineralisation for sterilisation purposes to locate proposed infrastructure.

In 2011, five RC holes (KPCRC116-119) were drilled northwest of the main mineralisation, with an additional eight DC twin holes drilled to the west, south and southwest of the Kipoi Central resource for metallurgical testing. Between August 2011 and July 2012 38 DC holes were completed to extend the resources to the west.

Six DC holes (KPCGTK009-15) for geotechnical purposes were completed during the first quarter of 2012. These holes were generally oriented with a southwest to west azimuth and a dip of -60^0 degrees

Specific instructions were issued by the site consultant for George Orr and Associates (Australia) Pty Ltd, with respect to the collar positions. The northing and easting of the selected collars could be moved a maximum of 10m from the pre-set coordinates, if required. All holes were drilled HQ3 (triple tube) and collared from surface. Core run lengths were restricted to a maximum of 2.5m during drilling and core orientation was to be attempted from inclined depths of 30m onwards. The usage of an Ezy-Mark core device was indicated. Unfortunately, all holes except one were abandoned prematurely due to difficult ground conditions.

The drilling undertaken by TIGER adequately defines the grade and thickness of the mineralised envelope.

10.2.2 Kipoi North

AC drilling commenced in September 2007 targeting the soil anomaly. A total of 55 holes totalling 1,996m were completed. The drilling identified visible copper mineralization on two lines 75m and 175m west of KPNDD006, to the west of the main working. This has extended the overall mineralised strike length of the Kipoi North prospect to 600m.

DC drilling was undertaken from April till June 2007, January till April and August through to October 2008, with 71 holes completed totalling 9,777m using a collar spacing of 50m by 50m to define the geological and grade continuity over the prospect area, with approximately 600m of continuous R2 series identified.

DC holes KPNDD007, 012 and 013 drilled at the eastern end of the Kipoi North prospect, intersected Breche Heterogene with only minor copper mineralization. This suggests the Breche Heterogene has stoped out the mineralisation to the east of the artisanal workings.

DC holes KPNDD001 to 005 and 010, 011 and 014 were drilled under the main workings and intersected moderately mineralised R2 and varying quantities of Breche Heterogene at 40m to 50m below surface. Poorly mineralised Breche Heterogene was intersected at depth in KPNDD011 suggesting that mineralization at Kipoi North is contained in a floating raft of R2 uplifted along a major structure.

DC holes KPNDD006, 008 and 009 targeted strike extensions to the west of the Kipoi North workings, and intersected a continuation of the mineralised R2 unit. Outcrop in this western area was limited to a semi-continuous unit of RSC, coincident with >300ppm copper anomaly in soils.

An RC drill program consisting of 22 holes totalling 2,128m (KPNRC001 to KPNRC022) was completed towards the end of 2007, covering the western end of the Kipoi North prospect. Drillholes were collared at a 50m by 50m spacing, to follow up visible mineralised intercepts in the AC drilling program. Drilling was undertaken over a 250m strike length with most holes intersecting visible copper oxide mineralization. An interpretation of the mineralization at the western end suggests that the stratigraphy dips steeply to the south, being the opposite direction to that at the eastern end of the prospect.

DC drilling undertaken in 2008 consisted of 29 holes totaling 4,020m. These drill results defined well developed and continuous zones of copper oxide mineralization with downhole widths of up to 60m over a strike of 650m to a sub vertical depth of 200m.

The principal zones of mineralisation remain open along strike, and down dip. Additional zones of high grade mineralization were intersected in large brecciated areas developed in limestone/dolomite adjacent to more coherent stratigraphically controlled mineralisation found in footwall sequences.

At Kipoi North, 71 DC holes totalling 9,777m and 22 RC holes totaling 2,129m were completed by the resource data cut date of January 2009. Of these, 52 DC holes totaling 6,820m and 16 RC holes totaling 1,665m were utilised for the Kipoi North Mineral Resource estimate. The drilling generally has a spacing of 50m by 50m, with some areas of 50m by 25m and others up to 50m by 80m.

Between February and July 2012, an additional 49 DC holes totaling 4698.9m were completed to infill the mineral resource on nominal 25m spaced sections. The core size were variable (PQ, HQ and NQ) depending on requirements. The drilling was oriented either 180^0 or 360^0 magnetic with the dip of the holes being -60^0.

In April and May 2012. 4 DC holes drilled by Gefor, were completed for geotechnical purposes.

The drilling undertaken by TIGER adequately defines the grade and thickness of the mineralised envelope.

10.2.3 Kileba

In August 2006, first pass RC and DC drilling was undertaken in the vicinity of the Kileba workings to evaluate the mineralization being exploited by the artisanal miners. 14 RC and 2 DC holes totaling 1,712m were drilled.

By March 2009, drilling has tested approximately 1.4km of prospective strike length at Kileba.

For the purposes of the Mineral Resource estimation completed on the Kileba South area in April 2009, 38 HQ sized DC and 40 RC holes for a total of 10,985m were used. Holes were drilled on a grid of approximately 50m along strike by 25m across strike.

Between the end October 2011 and March 2012, 63 DC holes (KLBDD038 to 100) totaling 8233.45m were completed to infill the mineral resource on 25m spaced sections.

In June and July 2012, an additional 29 DC holes (KLBDD101 to 129) totaling 2824.50m being extension drilling targeting the periphery of the mineral resource were completed. .

Four geotechnical DC holes were completed at Kileba using varying azimuths and dips as required.

Access to drilling locations was at times difficult and thus some holes were not drilled perpendicular to the mineralised envelope. However, the majority of the drill holes at Kileba were drilled perpendicular to the mineralised envelope and thus the sample length and the true thickness of the mineralization is approximately equal.

The drilling undertaken by TIGER adequately defines the grade and thickness of the mineralised envelope.

10.2.4 Judeira

AC drilling was undertaken in September and October 2007 with 70 AC holes (JUDAC001 to JUDAC070) completed on 11 lines totaling 2,748m.

The results of the drilling indicated sporadic mineralisation over the 1.6km of strike length defined by the soil sampling. Visible mineralisation was intersected in a number of the air core holes for 900m northwest of the main area of workings. The air core drilling was limited however due to the hardness of the ground and the steepness of the terrain

RC drilling at Judeira was undertaken in August and November 2006 with 20 RC holes (JUDRC001 to JUDRC020) completed totaling 1,329m covering 350m of strike length in the vicinity of the main artisanal workings. The program consisted of 17 RC holes (JUDRC001 to KUDRC015, JUDRC019 to JUDRC020) at the main artisanal workings and 3 RC holes (JUDRC016 to JUDRC018), 1.2km to the northwest of the workings.

The results of the RC drilling program indicated that there was mineralisation down to 50m vertical that would require follow up with diamond drilling.

A 29 RC drillhole program (JUDRC021 to 49) totaling 3373m was completed at Judeira between April 2011 and July 2011. Drilling was focused on the southern area with broad downhole mineralized zones intersected. The oxide mineralization was open down dip and at depth in this area and further follow up drilling was planned. The program recommenced in July 2012 with both RC and DC drilling being completed with 11 RC holes (JUDRC050 to 60) totaling 1184m and 11 DC holes (JUDDD003 to 13) totaling 1711.30 m. The aim was to focus on the northern area to cover the 600m of strike where earlier RC and AC drilling encountered mineralization and to follow up on the open mineralization in the south. Collar spacing in the southern area was approximately 50m by 50m with collars in the northern area planned at 50m on 100m line spacing. All holes were drilled at a dip of 60° with a northeasterly azimuth.

10.3 Sampling Procedure

10.3.1 Diamond Core Drilling

A total of 188 DC and 26 RC holes were drilled at Kipoi Central, with only limited AC and trenching carried out. Of the 188 DC holes, six were utilised for geotechnical purposes (not assayed) with 182 DC holes sampled and available for Mineral Resource estimates. Drilling collar spacing was primarily on a 25m by 25m and 50m by 50m drilling pattern. The intercept spacing changes at depth to between 50m by 30m to 80m by 50m depending on drillhole length.

The DC drill core was orientated and marked up on metre intervals prior to being logged for geological and geotechnical purposes by a geologist. Sample sheets were prepared with PQ, HQ sized core sampled on 0.5m intervals, and NQ sized core sampled on 1m intervals. Larger sample intervals were used where significant core loss occurred.

The core handling process involved several steps including:

• The driller placed the core into core boxes;

• The core boxes were stacked on the loading bay of a pick-up truck, strapped, and transported to the core logging and storage area;

• The core was laid out to ensure all boxes were present, correctly labeled and adequately cleaned before being processed;

• Core loss was measured from core block to core block (drill run) and recorded with measurements taken for the whole of the core recovered. At the drill site core broken by the drillers was marked;

• The core was geologically logged. Once completed the logs are forwarded on to the database administrator on site;

• The geologist marked up the core for splitting prior to photographing the core;

• The core was photographed both wet and dry prior to splitting;

• Bulk density measurements were determined using the Archimedean water displacement method to correlate with the sampled intervals. The core was wrapped or waxed for the density determinations; and

• The core samples were split using hydraulic splitters or cut with a core saw and bagged for shipment to the assay lab. Care is taken to ensure that no bias was introduced into the splitting by observing that the mineralized intervals core was split appropriately. The fines that were produced were also manually split and sampled.

10.3.2 Reverse Circulation Drilling

The sampling procedure can be summarised as follows:

- Collection of the drill chips for each metre drilled in a marked sample bag directly at the cyclone on the drill rig;
- Weighing the full sample bag representing the 1 metre sample and recording of the weight on a log sheet or field book;
- Complete homogenisation of the sample by passing it through the riffle splitter twice prior to further reducing it down to collect the sub-sample for assay;
- One 2kg sample was collected in a calico bag for assaying, with an additional sample taken if a duplicate assay is required;
- The sample to be submitted to the lab is analysed by a handheld XRF instrument (Niton) prior to submission to the assay laboratory;
- Junior geologist/technicians control all numbering of sample bags and sample collection;
- Calico bags have the sample number marked on the outside but also have a reference ticket from the ticket book inside. Each reject sample is stored in a plastic bag in an appropriate area in the field. A chip sample is collected, sieved to remove fines, washed in water prior to logging and storage in a chip tray;
- Duplicate samples, standards and blank samples are submitted with the sample stream to the laboratory to monitor QAQC through the assay process;
- A Senior geologist supervises the logging of all RC chips, and
- A Senior geologist/junior geologist captures all data on computer on site.

Depending on ground conditions, sample recovery could be variable and thus will have an impact on the quantity of material recovered in each metre.

Cube and CSA considers the sampling methods described above to be industry standard and would result in representative samples being obtained.

10.4 Core Recovery

Core recovery in the mineralised zones at the Kipoi Copper Project was highly variable with the oxide zone being clay, weathered siltstone, dolomite and dolomitic sandstone and the mineralization being friable copper/cobalt oxides located in cross cutting veins and parallel to bedding.

In general, core recovery improved in the transition and fresh zones, where the mineralised zone was generally more competent hosted by black/grey dolomitic siltstones with transition copper minerals. However, historical core recoveries have been dependent on the core size that was selected with better core recoveries achieved when a larger core size was used.

DC holes at Kipoi Central were initially collared using PQ diameter core or tri-cone pre-collars, with a reduction to HQ and NQ sized core when more competent rock was reached or when drilling difficulties were encountered. This reduction to a smaller diameter core size, without using a triple inner tube to maintain core integrity when the core was discharged from the core barrel, contributed significantly to the core loss. The more recent DC holes at all three prospects have utilized HQ3 and PQ3 core size using a triple inner tube. This initiative was been effective in reducing core loss.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

This section detailing the Kipoi Copper Project sample preparation, analysis and security, has been extracted from the CSA NI43-101 Technical Report dated May 2009. Sources of information have not been referenced individually. The sample preparation, analyses and security procedures relevant to the Mineral Resource estimates reported in this October 2011 technical report have not changed since that reported in the CSA NI43-101 Technical Report dated May 2009.

11.1 Diamond and Reverse Circulation Drilling Program

Up until November 2007, all sample preparation and analysis was undertaken using ALS Chemex in Johannesburg. Post November 2007, sample preparation was undertaken by TIGER employees in a newly established field facility as detailed below.

For holes up to and including KPCDD048 and KPCRC109, the sample dispatch and preparation process used comprised:

- Individual drillcore samples (on average 1 to 3kg) were packed into calico/plastic bags and assembled at the Tiger Kipoi field office by Tiger employees, and packaged into large, labelled polyweave bags, capable of taking between 20 and 30kg of samples. Batches were transported by road and submitted to the ALS laboratory in Johannesburg. The ALS facility is covered by ISO 9001:2000 certification for the “provision of assay and geochemical analytical services”. Quality control and work instructions are common with other worldwide ALS laboratories. An internal Quality Control Group coordinates all inter-laboratory round robin work, and directs the laboratory in various external proficiency testing programs. ALS has successfully participated in these programs and has engaged the Standards Council of Canada to include the South African laboratory in the 17025 accreditation scheme.
- Each dispatch to ALS was accompanied by an emailed sample listing and submission form detailing key information, namely:
- Sample source – shipment and order numbers.
- Tiger responsible person – Name and contact details.
- Quantity of samples.
- Sample type.
- Individual sample numbers.
- Sample preparation methodology and assay requirements.
- Unique labelling of batch number for borehole submission.
- Upon receipt at ALS, sample containers were counted and recorded. Sample bags were unpacked, tags for each sample bag cross checked against the submission form, with discrepancies being communicated back via email to the TIGER responsible person in Lubumbashi and a remediation plan agreed. Once accepted by ALS, all samples were assigned a unique ALS number and logged into the Laboratory Information and Management System (ALS LOG-22 process). A sample receipt form was emailed back to the TIGER coordinator. Sample weights are also recorded on reconciliation forms (WEI-21 process).
- The entire contents of each sample were emptied into stainless steel drying trays and oven dried at 105^{o}C (+-5^{o}C) for a period of 8 to 10 hours (DRY21 process) (Soil and sediments are dried at 60oC to minimize loss of volatiles).
- Samples were then crushed in a TM Terminator jaw crusher to a 70% passing 2mm screen size (CRU-21 process).
- The crushed samples were then split using a Jones riffle splitter (~10mm slots) to produce a 1kg split ready for pulverization (SPL-21 process). Random granulometry checks were run to ensure quality control in the crushing process.

This process comprises:

- Collection of a minimum 100g coarse reject material, taken from the discard part of the riffle splitter, not the split that goes to the pulveriser;
- Dry screening through a 2mm sieve, and determination of percent material passing the 2mm sieve;
- The 1kg sample was then pulverized using a low chrome content grinding vessel (to prevent contamination) in a LM2 pulveriser to an 85% passing 75µ screen size (PUL-32 process). Random samples, comprising at least one percent of all samples pulverised were submitted to granulometry testing. The granulometry test comprised use of a minimum of 25g pulp and determination of percent material passing 75µ screen;
- The resultant pulp sample was then quartered on a plastic sheet to provide an approximate 200g sample for assay and packaged into individually tagged packets;
- Coarse and pulp rejects were re-bagged into separate plastic bags and stored in the ALS facilities in Johannesburg;
- All equipment above was cleaned between each sample using brush and high pressure air and between batches with a coarse quartz media; and
- Results of the granulometry checks were monitored on an ongoing basis by ALS and results made available for inspection by TIGER personnel.

For holes subsequent and including KPCDD049 and KPCRC110 (post November 2007 up to end of 2008) the sample preparation and dispatch process was modified reflecting the installation of on-site sample preparation facilities at the Kipoi exploration office. The onsite laboratory was utilized by exploration until mid-2011 when the Kipoi mine site took over the laboratory for grade control. Since mid-2011, cut core has been sent off site for analysis.

Up until mid-2011, the onsite laboratory procedures were:

- Individual drillcore samples (on average 1 to 3kg) are assembled at the Kipoi sample preparation facility (KSP). The facility comprises a new, containerised sample drying and preparation lab built by ALS and managed by Tiger with supervision provided by an ALS trained laboratory manager, then taken over by the locally trained people;
- Procedures used at KSP are modelled on the ALS Johannesburg process;
- Each dispatch to KSP is accompanied by an emailed sample listing and submission form detailing key information, namely:
- Sample source – shipment and order numbers.
- Tiger responsible person – Name and contact details.
- Quantity of samples.
- Sample type.
- Individual sample numbers.
- Sample preparation methodology and assay requirements.
- Unique labelling of batch for each assay submission.

Upon receipt at KSP, sample tags for each sample bag was cross checked with the submission form, with discrepancies being immediately communicated back via email to the TIGER responsible person in Lubumbashi and a remediation plan agreed.

- A sample receipt form was emailed back to the TIGER coordinator. Sample weights were recorded on reconciliation forms.
- Entire contents of each sample was emptied into stainless steel drying trays and oven dried at 90oC (+-5oC) for a period of 8 to 10 hours.
- Samples are then crushed in a TM Terminator jaw crusher to a 70% passing 2mm screen size.
- The crushed samples were then split using a Jones riffle splitter (~10mm slots) to produce a 1kg split ready for pulverization. Granulometry checks were run on a frequency of 1 in 30 samples, to ensure quality control on the crushing process.

This process comprises:

- Collection of a minimum of 100g coarse reject material, taken from the discard part of the riffle splitter, not the split that goes to the pulveriser.
- Dry screening through a 2mm sieve, and
- Determination of % material passing the 2mm sieve.
- The 1kg sample is then pulverized in a LM2 pulveriser for 6 minutes, depending on the hardness of the sample to a 90% passing 75μ screen size. 1 in 10 samples are wet screen checked for granulometry compliance. The granulometry test comprises the use of a minimum of 25g pulp with wet screening on a 75μ. screen, and determination of percent material passing 75μ.
- The resultant pulp sample was then riffle split to provide a 200g sample for assay and packaged into individually tagged paper packets. Pulps were packaged into cardboard boxes and dispatched by air to ALS in Johannesburg.
- Coarse and pulp rejects were re-bagged into a single plastic bag and stored in the KSP storage facilities.
- All equipment above was cleaned between each sample using brush and high pressure air.
- Results of the granulometry checks were monitored on an ongoing basis by the laboratory supervisor.

The assay procedure comprises:

- All samples were assayed in number sequence to ensure analysis of standards, blanks and duplicates inserted in order into the stream by Tiger.
- Routine assays were conducted using an aqua-regia acid digestion with ICP finish (ME-ICP41 process) to provide determinations for 35 elements (Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W, Zn). All Cu and Co determinations are re-assayed by four acid (HF-HNO3-HClO4) digestion, HCl leach) with ICP finish to provide an improved level of accuracy on these values (ME-OG62 process). Zones of elevated Ag (>10ppm) were resubmitted for ME-OG62 determination.
- An ALS Quality Control (QC) monitoring program was maintained throughout the process. Typically duplicate + blank + standards checks comprised a minimum of 10% of samples submitted.
- The Quality Control process as a minimum has comprised the submission of the following;

11.2 Standards

- Inclusion of certified standards and/or internal reference materials covering a variable range of assays grades.
- Batch failures have comprised: a) Any standard value outside the 3 standard deviation limits (accuracy) or b) Any two consecutive values outside the 2 standard deviation limits on the same side of the mean (bias). ALS ME-ICP41 CRM limits are +/- 15% for Sb, Ba, Tl, W, Zr and 10% for all other elements; ALS ME-OG62 CRM limits are +/- 3.5% for all elements.

11.3 Blanks

- Inclusion of at least one regent blank with each assay batch.
- Blank assay results outside of acceptable limits were discussed with TIGER personnel and batches re-assayed as appropriate.

11.4 Analytical Duplicate Samples and Repeat Assays

- Assay results of an analytical duplicate or repeat assay were expected to be within ±10% of the grade of the original assay on a scatter plot depending on the nature of the material.

- Assay results that consistently exceed the 10% limit were investigated by ALS and results reported to TIGER. ALS undertakes repeat analysis on requested samples as appropriate. Remaining problem determinations were QC checked with either the ALS Canadian or Australian offices.

Results for the above checks have been reported to TIGER on a batch by batch basis.

- Finalised assay results were returned to TIGER electronically by email where they were prepared and imported into the electronic database in Lubumbashi.

11.5 Air Core Drilling

For AC drilling the following procedures was followed:

- Samples once collected were air dried at the base camp and split into a 500g sub-samples. The sub-samples were sieved to -2mm with 100g collected into re-sealable plastic Niton bags and submitted to the Lubumbashi Exploration office where they were analysed using XRF Niton.
- All samples with >0.1% copper and cobalt (<0.1% within a continuous zone of mineralisation) as measured on the Niton, were forwarded to ALS for assay.
- As a routine every 25th sample was forwarded to an external laboratory for analysis.
- Standards were inserted every 25th sample.
- Every batch of 25 samples submitted for analysis had a blank and a repeat sample. All aspects of sampling and sample preparation was supervised by TIGER and ALS personnel.

12.0 DATA VERIFICATION

This technical report for the Kipoi Copper Project has been based on information provided by TIGER. This data includes third party technical reports and relevant published and unpublished third party information listed in Section 27.0 of this report.

12.1 Project Database

The database is managed by CSA Global based in the United Kingdom. For the Kipoi Central, Kileba and Kipoi North Mineral Resource estimates, CSA Global provided a copy to Cube of the validated Access database representing collar, downhole survey, assay and geology data.

12.2 Kipoi Central

12.2.1 Validation Drilling

Cube Principal Consultant, Terje Hansen was on site at the Kipoi Central Project in late March 2007 to:

- Review the controls on mineralisation and geological interpretation;
- Review the data collection, data storage and QAQC procedures.

Whilst on site, Cube independently requested that a DC hole (KPCDD017) be drilled to verify the mineralised intercept in KPCDD001. The purpose of the twin hole was to validate the grade and intersection width of the mineralised zone in KPCDD001 where the core recovery was only 66%. In addition, the twin hole trialled the use of a larger core size (PQ verses NQ) and triple inner tube in order to improve core recovery in the oxide profile.

Prior to the commencement of drilling, the mineralised interval in KPCDD001 was laid out and reviewed. This enabled Cube to compare the expected visual geology in KPCDD017 with that in KPCDD001. The drillhole was collared approximately 2 metres from the existing hole.

The start of mineralisation was observed at approximately 29m. The rig continued to drill during night shift with the core being left at the rig until inspection by Cube personnel in the morning of the 29th March.

As confirmation of the mineralised zone, the two holes KPCDD001 and KPCDD017 were laid out side by side in the core sampling area to visually correlate the geology and confirm the areas of mineralisation was similar in both the holes.

When the mineralisation in KPCDD017 was analysed, the mineralised interval in KPCDD017 (70m at 4.4% copper) compared favourably with the interval in KPCDD001 (67.4m at 4.6% copper).

12.2.2 Quality Control Data

A report on the QAQC completed by Cube in May 2012 ("QAQC Report Final – Kipoi Central May 2012") details the analysis of standards, blanks and duplicate samples submitted as part of the quality control process for the Kipoi Central Project, covering the period from May 2006 to May 2012. The period end date corresponds to the database cut-off date for the latest Kipoi Central Mineral Resource estimation (April 2012) but includes data associated with 1 additional drillhole (KPCDD148) not included in the resource.

The QAQC audit report has outlined 69 samples, corresponding to 5%, from a total of 1,484 control samples contained in the database that exceeded the expected sample variance limits (two standard deviations) and require follow-up checking. This outcome includes the results from control samples inserted internally by the laboratory and reported back to the client. In addition, 27 samples (approximately 2%) were identified as possible mishandling errors and were not included among the failing samples. These cases should be investigated and corrected in the database when appropriate. Overall, the results of the QAQC review are considered acceptable.

In addition, of the 1,129 blank samples contained in the database, 35 returned a copper value outside of the accepted limits, corresponding to a 3% failure rate. This outcome includes the results from control samples inserted internally by the laboratory and reported to the client.

A total of 891 field duplicate samples were inserted into the sample stream, mainly from diamond drilling. These duplicate assays show reasonable precision at both laboratories involved.

A total of 94 coarse duplicate samples produced from reject material we analysed during 2008 showing very good levels of precision.

A total of 337 pulp duplicate samples were submitted for analysis to the ALS Chemex laboratories in Johannesburg (ALS_JHB) and Perth (ALS_PTH). The results for the samples analysed by ALS_JHB are considered acceptable. The results of samples analysed by ALS_PTH show very low levels of precision and are considered unacceptable. The fact that many of the duplicate samples analysed were not included in the same batch as the original sample and possibly not taken simultaneously may account for part of the error observed. These results should be investigated.

A total of 1,143 pulp duplicate samples were submitted for reanalysis to Genalysis. The results show acceptable levels of precision. However, a positive bias of about 5% is observed for results greater than 1% Cu. This bias could be attributed to the differences in analytical methods used between the ALS and Genalysis laboratories; however, this behaviour should be investigated.

In summary, the performance of the QAQC samples is satisfactory and indicates that the sample data is of an adequate standard for Mineral Resource estimation.

12.3 Kileba

12.3.1 Quality Control Data

A report on the QAQC completed by Cube in August 2012 (“QAQC Report Final – Kileba August 2012”) details the analysis of standards, blanks and duplicate samples submitted as part of the quality control process forr the Kileba Project, covering the period from August 2006 to August 2012. The period end date corresponds to the database cut-off date for the latest Kileba Mineral Resource estimation.

The QAQC audit report has outlined 108 samples, corresponding to 4%, from a total of 2,685 standard control samples contained in the database that exceeded the expected sample variance limits (two standard deviations) and require follow-up checking. This outcome includes the results from control samples inserted internally by the laboratory and reported back to the client. In addition, 17 samples (approximately 1%) were identified as possible mishandling errors and were not included among the samples that failed. These cases should be investigated and corrected in the database when appropriate. Overall, the results are considered acceptable.

In addition, of the 1,762 blank samples contained in the database, 10 returned a copper value outside of the accepted limits, corresponding to a failure rate less than 1%. This outcome includes the results from control samples inserted internally by the laboratory and reported to the client. The results are considered acceptable.

A total of 925 field duplicate samples were inserted into the sample stream, mainly from diamond drilling. These duplicate assays show reasonable precision at both laboratories involved.

A total of 433 pulp duplicate samples were submitted for analysis to the ALS Chemex laboratories in Johannesburg (ALS_JHB) and Perth (ALS_PTH). The results analysed by ALS_PTH indicate good levels of precision between pairs. However, the data analysed by ALS_JHB showed several outliers which undermined the precision level of these samples. These results should be investigated as they are considered to represent an unacceptable level of precision for this type of sample.

A total of 210 pulp duplicate samples previously analysed by ALS_JHB were submitted for reanalysis to Genalysis. The results for these umpire checks show acceptable levels of precision. However, a negative bias of about 3% is observed for results less than 1% Cu. This bias could be attributed to the differences in analytical methods used between the ALS and Genalysis laboratories; however, this behaviour should be investigated.

In summary, the performance of the QAQC samples is satisfactory and indicates that the sample data is of an adequate standard for Mineral Resource estimation.

12.4 Kipoi North

12.4.1 Quality Control Data

A report on the QAQC completed by Cube in October 2012 ("QAQC Report Final – Kipoi North October 2012") details the analysis of standards, blanks and duplicate samples submitted as part of the quality control process for the Kipoi North Project covering the period from July 2007 to September 2012. The period end date corresponds to the database cut-off date for the latest Kipoi North Mineral Resource estimation.

The QAQC audit report has outlined 65 samples, corresponding to 6%, from a total of 1,146 control samples contained in the database that exceeded the expected sample variance limits (two standard deviations) and require follow-up checking. This outcome includes the results from control samples inserted internally by the laboratory and reported back to the client. In addition, 5 samples (approximately 0.5%) were identified as possible sample handling errors and were not included among the samples that failed. These cases should be investigated and corrected in the database when appropriate. Overall, the results are considered acceptable.

In addition, of the 859 blank samples contained in the database, 11 returned a copper value outside of the accepted limits, corresponding to a 1% failure rate. This outcome includes the results from control samples inserted internally by the laboratory and reported to the client and is considered satisfactory.

A total of 424 field duplicate samples were inserted into the sample stream, mainly from diamond drilling. These duplicate assays show acceptable levels of precision at both laboratories involved.

A total of 105 coarse duplicate samples produced out of reject material were analysed during 2008 showing very high levels of precision.

A total of 352 pulp duplicate samples were submitted for analysis. The results for these samples show a lower level of precision than expected as no improvement is observed when compared against field duplicates. The fact that many of the duplicate samples analysed were not included in the same batch as the original sample and possibly not taken simultaneously may account for part of the difference observed. It is recommended that these results are investigated.

A total of 699 umpire duplicate samples were submitted for reanalysis to the Genalysis laboratory. The results show levels of precision that are lower than expected, comparable to those of field duplicates. It is recommended that this behaviour is investigated.

In summary, the performance of the QAQC samples is satisfactory and indicates that the sample data is of an adequate standard for Mineral Resource estimation.

12.4.1.1 Authors Note

To complete the QAQC process, it is recommended to include an analysis of duplicates and that selected sample pulps from the original data used in the resource should be sent to a second independent laboratory for umpire laboratory analysis check. It is suggested that a frequency of 5% of samples within the mineralised resource envelope (~0.3% Cu) be used, ensuring to include representative proportions of both high and low grade material. This procedure will help to validate the original assays used in the resource estimate.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Stage 2 DFS Processing

This section detailing the Kipoi Copper Project Stage 2 EA processing, has been extracted from the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012. Sources of information and diagrams have not been referenced individually.

Stage 2 of the Kipoi Copper Project processing plant consists of:

- Two stage crushing
- Scrubbing and Classification
- Sulphuric acid leaching of the fine ore in agitated leach tanks
- Counter Current Decantation (CCD)
- Tailings Disposal and decant return
- Sulphuric acid leaching of the coarse ore in a heap leach
- Solvent Extraction (SX) and
- Electrowinning (EW)

The Kipoi Copper Project - Stage II plant will be developed in three phases.

Phase 1

Leaching operations and the subsequent production of cathode will be achieved at Phase 1 by treating HMS floats material and installing equipment required for the processes of Heap Leach, SX and EW. The nominal design capacity of cathode for Phase 1 is for production of 25,000 tpa of cathode. However for the first 12 months of operations this has been de-rated to 23,500tpa.

Main components of the Phase 1 are shown in Figure 13-1

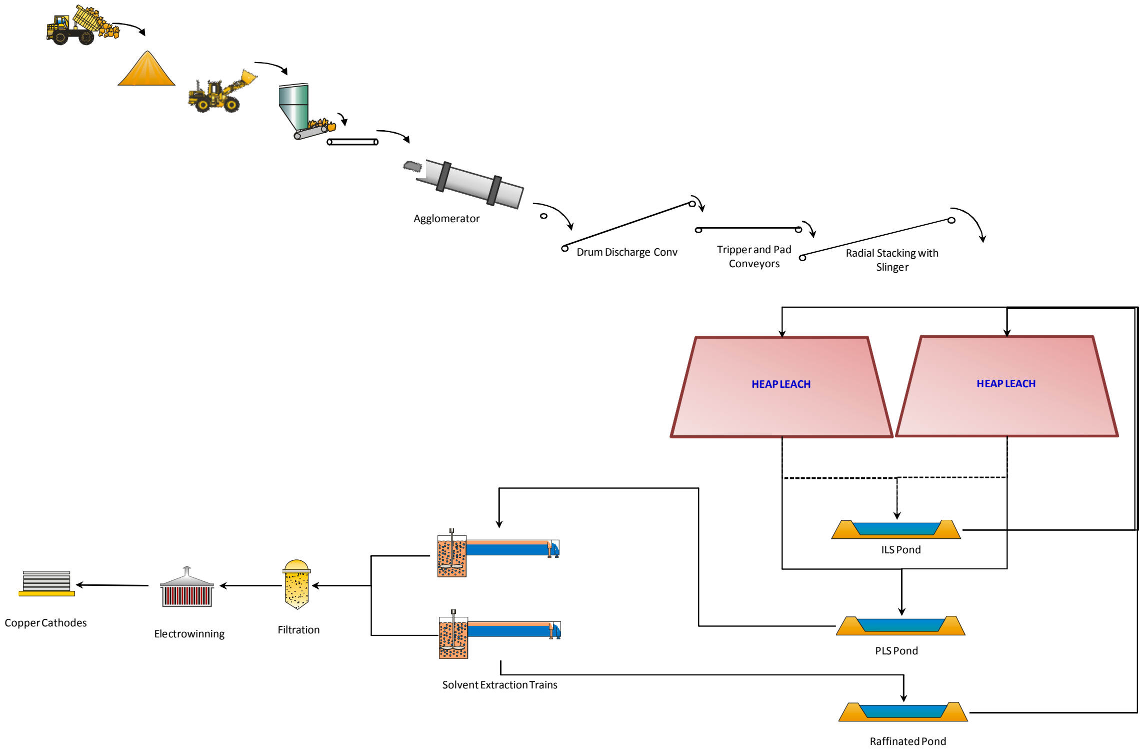

Figure 13-1 Phase 1 Processing Plant

Phase 2

In Phase 2, crushing and scrubbing equipment will be installed so that run of mine material can be processed. The SX-EW capacity will be expanded to 50,000tpa through the addition of a second 25,000tpa SX train. A temporary slimes storage dam will also be installed.

Main components of Phase 2 shown in Figure 13-2.

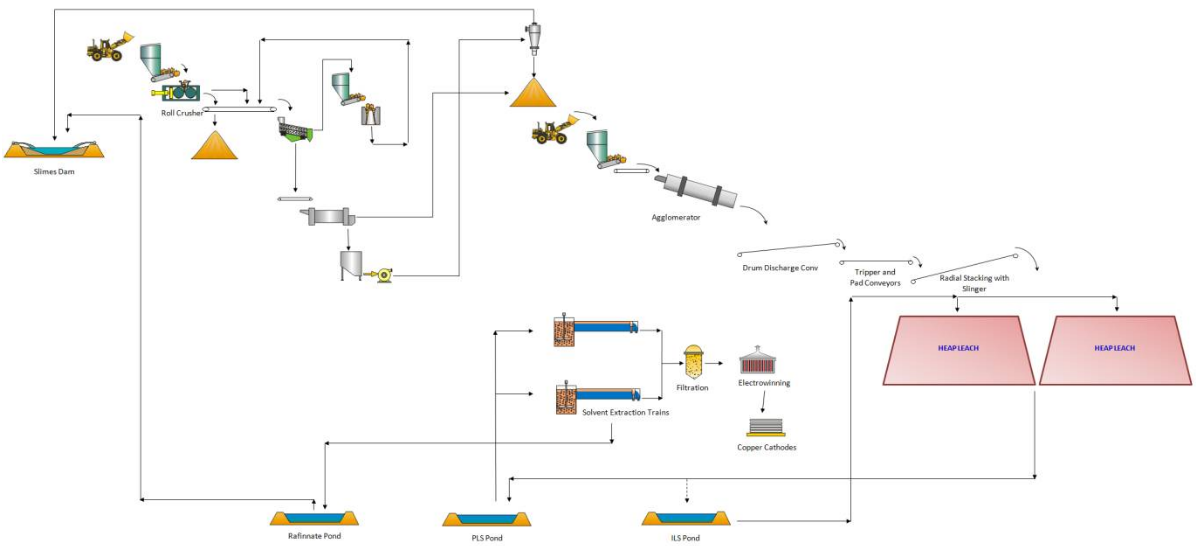

Figure 13-2 Phase 2 Processing Plant

Phase 3

Equipment installed at Phase 3 will be required for treatment of the fines component of the ores. Installation of the Agitated Tank Leach, CCD and TSF will allow this material to be treated to maintain cathode production rates at a time when the HMS floats stockpile has been depleted and ore grades begin to decline.

Figure 13-3 shows the configuration of the entire Processing Plant, after construction of Phases 1, 2 and 3.

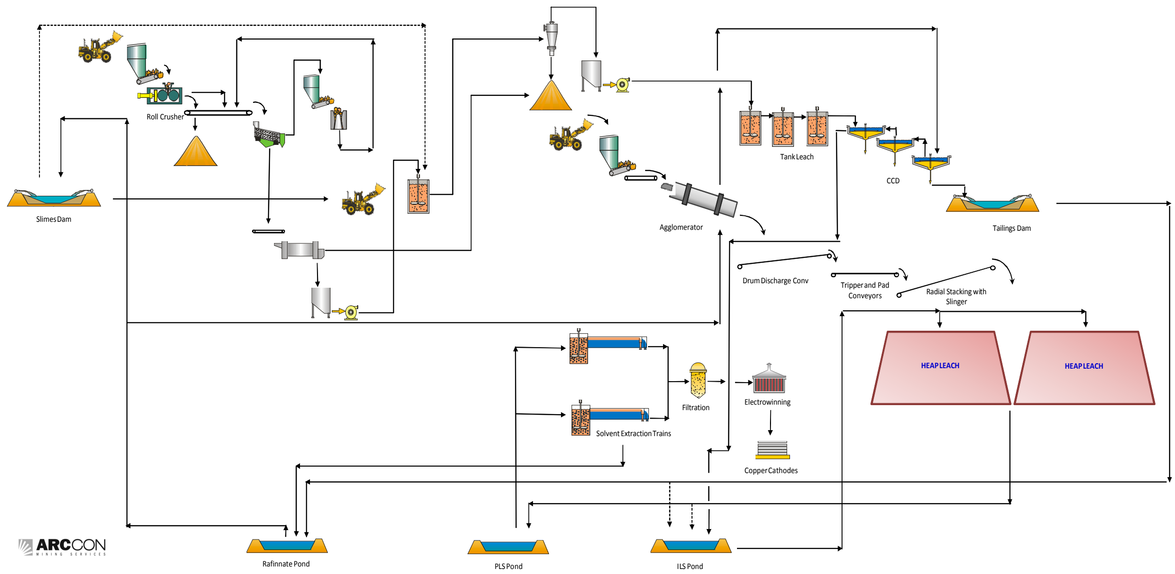

Figure 13-3 Phase 3 Processing Plant

13.2 Metallurgical Testwork and Data Review

This section detailing the Kipoi Copper Project metallurgical testwork, has been extracted from the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012. Sources of information and diagrams have not been referenced individually.

13.2.1 Scoping Study Summary

Two phases of metallurgical testing have been completed on ores from the Kipoi Central deposit. Work was conducted by Ammtec and Amdel. Metallurgical testwork indicated that the crushed and washed high grade oxide ore is amenable to heavy media separation (HMS) to produce a 25% copper concentrate, incorporating a gravity upgrade of washed fines via spiral separation.

A minor amount of hydrometallurgical testwork had been completed at this time including:

Ammtec (2007) where it was established copper mineral was almost exclusively malachite.

Amdel (2008) where Sequential copper assays from diamond drill core indicated that the ore was over 95% acid soluble copper minerals, with acid consumption of 4-22 kg/t. Additionally scrubbing tests indicated a potential to remove fines to allow for a coarser fraction to be heap leached.

13.2.2 Feasibility Study Metallurgical Samples

The project will utilise a range of feed ore sources over the project life, namely.

- HMS Floats 9%
- HMS fines 6%
- Kipoi Stage I Medium Grade Ore 12%
- Kipoi Central Stage II Ore 41%
- Kileba Ore 22%
- Kipoi North Ore 9%

13.2.3 Sample Selection and Background

HMS Floats

The HMS floats were collected over the period of 10th August to 24th August 2011 (as were the slimes). At this time the ore source was from 1320 – 1312.5 rl Bench of Pit 1A. It was considered it would be representative of the average material based on the geology of the Kipoi Central orebody. Additionally it was considered that it was not necessary to duplicate testing of the Medium Grade Ore that was being stockpiled for treatment in Stage II as it would be represented by both the HMS Floats and HMS Fines samples being tested.

The assays on the head sample of 3.15% Cu compare well to the expected average grade of the feed at 3% Cu.

HMS Fines

Collected as above

Kipoi Stage I Medium Grade Ore

No testing of this material was undertaken directly as it was considered that the samples of existing HMS Floats and Fines and composites of Kipoi Central Stage II Ore would be sufficiently representative.

Kipoi Central Stage II Ore

As noted above a bulk sample of HMS floats and fines was obtained from the current mining operation providing an excellent bulk representative sample of the oxide ore body. The only major differentiator to the proposed ore to be processed in Stage II is a reduction in Cu grade from the 3% of the HMS samples to approximately 1.3%.

A dedicated drilling programme was undertaken to obtain both representative samples of the orebody and samples for variability testing.

The orebody geology was reviewed with Cube Consulting and based on their guidance and discussion with consultant Graeme Miller (MMS) in discussion with Cube, cross and long sections of the deposit with the shells overlaid were utilized to select the existing holes suitable for the programme and that could be twinned. In some cases the target was not the entire hole but certain sections of it that gave the required diversity of samples.

The aim was to target the combined parameters of:

- weathering profile (top to bottom)
- base of oxidation and base of primary – a narrow but erratic band with mostly chalcocite in black shale
- copper grade close to the average to be produced
- Low and high dolomite zones that are generally characterised by high Ca + Mg.

Once the drilling was completed and core logs, core photos and assay were available the detailed plan for establishing representative composites was determined. The mining study indicated that there were two logical stages in the development of the Kipoi Central ore body, being Stage I and Stage II. As these represented the major blended ore types that would be presented as ROM to the plant these were then established as the first two composites. Analysis of Cu, Ca and Mg and S analysis along with visual mineralogy from logging indicated no significant geological or metallurgical variability within the two stages. The third composite represented the transitional sulphide material.

The three composites that were established are defined as:

- C1 - Pit 1 composite (oxide)
- C2 - Pit 2 composite (oxide)
- C3 - Transitional oxide/sulphide composite

An additional sample of sulphide ore (C4) was added to the test suite following preliminary results from the transitional material that exhibited high recoverable Cu potential from the proposed heap leach and agitated leach processes. The sample was selected in consultation with Cube consulting to enable development of a composite representative of the sulphide material within Kipoi Central.

Kileba

To allow for timely completion of testwork, samples selected for Kileba were from the existing drill core as at mid 2011. Sample selection was conducted with assistance from Cube resource geologists following a site visit and viewing of selected half core, drill logs and core photos.

The Kipoi Stage 2 Scoping Study geological model has defined two distinct geological zones within the ore body. For Kileba 2 zones are presently described as North Lode (zone 1) and South Lode (zone 2). From the scoping study the zone 2 South lode dominated the Mineral Resource Estimate with an average grade of 1.35% Cu and mine grade of 1.28% .

Cores 7, 8, 10, 11, 12, 13, 15, 29 and 34 were initially selected and subsequently refined to final selection of 8 and 29. These holes were selected after viewing the geological model cross sections which contained drill locations and Cu/Mg/Ca/S assays with geological domains. The assay of the composited samples from zone 1 and zone 2 holes 8 and 29 returned Cu head assays of 3.78% and 1.37%. It was considered that the zone 2 sample would be representative of the average mineral resource.

Kipoi North

To allow for timely completion of testwork, samples selected for Kipoi North were from the existing drill core as at mid 2011. Sample selection was conducted with assistance from Cube resource geologists following a site visit and viewing of selected half core, drill logs and core photos.

The Scoping Study geological model has defined five distinct geological zones within the ore body of which two were considered the main mineralized domains, Stratabound Domain 1 (R2 sequence) and Footwall Domain 2 (faulted contact between DStrat and RAT).

For Kipoi North it was decided to establish two composites which would represent

- Firstly the stratabound domain 1.
- The second composite would be established that represented a combination of the major domain 2 along with domain 4 (stratabound domain 4 R2 sequence in the NE footwall. These zones are present described as North Lode (zone 1) and South Lode (zone 2)
- From the scoping study the zone 2 South lode dominated the Mineral Resource Estimate with an average grade of 1.35% Cu and mine grade of 1.28% (Scoping Study)

Cores 1, 21, 31, 40, 44, 47A, 62 and 64 were initially selected and subsequently refined to final selection of 31, 62 and 64. These holes were selected after viewing the geological model cross sections which contained drill locations and Cu/Mg/Ca/S assays with geological domains.

The assay of the composited samples from domain 1 and domain 2&4 holes 31, 62 and 64 returned Cu head assays of 1.43% and 1.46%. It was considered that these would be representative of the average mineral resource which was estimated at 1.46% Cu in the Scoping Study.

13.2.4 Feasibility Study Testwork Programme

The general test work programme is best summarised by the Figure below (Figure 13-4). This program was established in consultation with Mintek and MMS. All work was undertaken by Mintek (or their nominated sub contractor), at their Randburg facilities in South Africa. SEK with assistance from MMS managed the Mintek activities and MMS undertook the testwork interpretation to establish key process design criteria.

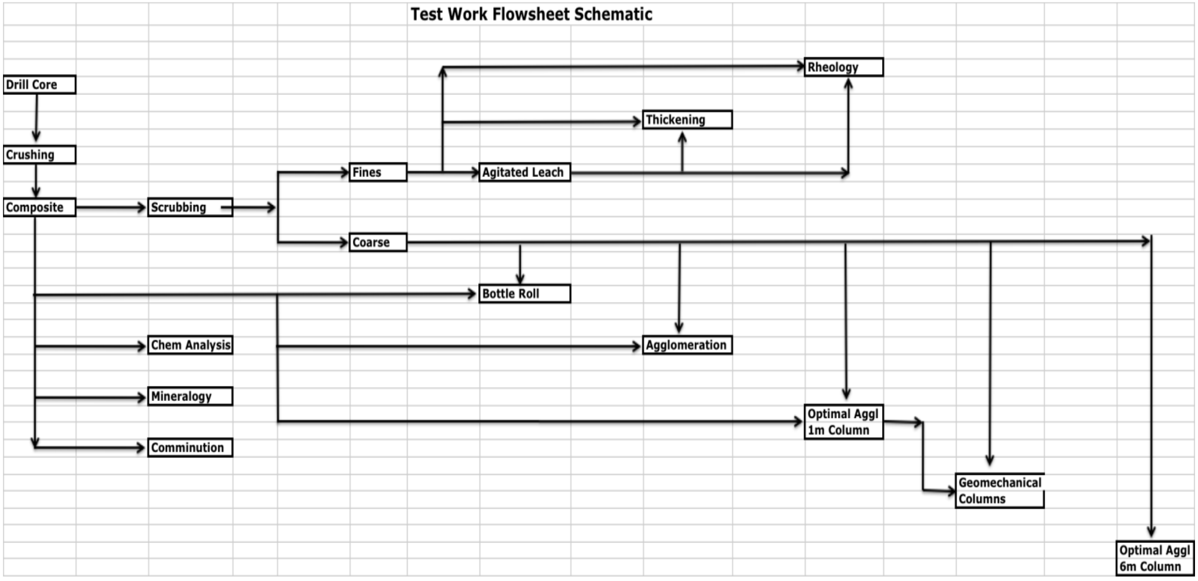

Figure 13-4 Testwork Flowsheet Schematic

After selection and delivery of drill core to Mintek, the 1m sections of core were crushed to -25mm and specified composites were then generated. Each composite was split with subsequent splits being subjected to Scrubbing, Chemical Analysis, Mineralogy, Bottle Roll and Comminution testing.

From the scrubbing tests the optimum scrubbing conditions were selected to then prepare a scrubbed coarse (+106um) and scrubbed fines (-106um) for subsequent further testing.

The coarse fraction was then subjected to bottle roll testing to establish acid consumption and total acid soluble copper content. This data was then utilized to undertake agglomeration optimization testing.

Following establishment of optimal agglomeration conditions these were utilized to prepare agglomerated material for 1m column testing. The column leach conditions were established based on typical leach parameters and ore characteristics established to date.

An agglomerated sample was also prepared for Geomechanical testing. A column residue sample was also subjected to Geomechanical testing.

Based on data generated from prior testing 6m columns were then conducted at optimal agglomeration and optimal leach conditions.

For a number of the composites, agglomeration optimization and a single column testing was conducted.

The scrubbed fines material underwent agitated leach optimization testing. Scrubbed fines and agitated leach residue were then tested to establish settling and slurry Rheology characteristics.

The details of each of the test work programme and test procedures is provided in the DFS. The consolidated report from Mintek containing all procedures and results is also provided in the DFS. A review and interpretation of the Mintek works was completed by MMS (provided in the DFS) from which much of the following discussion is derived.

13.2.5 Mineralogy

For each of the samples a detailed mineralogy was carried via visual microscopy, XRD and QEMSCAN with modal host mineral and Cu deportment mineralogy results summarized in the Figure 13-5.

Mineral Species			Kipoi Central				Kileba		Kipoi Nth	
	HMS Floats	HMS Fines	KPC C1	KPC C2	KPC C3	KPC C4	1	2	1	2 + 4
	Oxide	Oxide	Oxide	Oxide	Transition	Sulphide	Oxide	Oxide	Oxide	Oxide
Chalcocite/digenite	2.3				11	36	2.8	0.8	11	4.4
Chalcopyrite	0.2				10	42	1.6	0.2	0.2	0.1
Covellite						2	0.4		1.1	0.4
Bornite					5	8	0.3		0.2	
Chrysocolla	7.5	26		4	11	1	2.8	1.3	4.2	4.7
Shattuckite	1.0						0.4		0.9	0.7
Malachite	81.9	67	15	42	51	10	76	32	72	70
Pseudomalachite	7.0	6	85	54	13		15	66	10	19
Others	0.1									
		back calculated from modal mineralogy								

Figure 13-5 Cu Deportment Mineralogy

In all cases the mineralogy was consistent with drill core logging, drill core assays, drill core photos and subsequent composite sample analysis. As expected, malachite forms the dominant copper oxide mineral; however there is also a significant amount of pseudo malachite present. The presence of chrysocolla, chalcocite/ diginite/ covellite was noted

The host rock mineralogy, supported the necessity for scrubbing of the presence of talc, clays and some carbonate (dolomitic) materials. The elevated carbonates in Kileba and Kipoi North will result in elevated acid consumption characteristics.

13.2.6 Scrubbing Tests

All of the test results have been compiled and the Table 13.1 provides the summarized data for all samples tested. In general the results indicate potential for ROM leaching so additional testing was commissioned to investigate this opportunity.

Deposit	Sample	Scrubbing	Scrubbing
		% -106um	% -212um
Kipoi Central			
	HMS Floats		
	Medium Grade (Oxide)		30.0
	HMS Fines (Oxide)		
	C1 (Pit 1, Oxide)	13.4	16.1
	C2 (Pit 2, Oxide)	8.0	10.0
	C3 (Transition)	11.2	14.3
	C4 (Sulphide)	4.8	6.3
Kipoi North			
	C1 (Domain 1, Oxide)	13.0	16.0
	C2&4 (Domain 2&4, Oxide)	19.2	25.7
Kileba			
	C1 (Domain 1, Oxide)	14.2	18.9
	C2 (Domain 2, Oxide)	24.9	30.0

Table 13.1 Scrubbing Test Sample

13.2.7 Bottle Rolls

Bottle Roll tests were conducted on the column feed samples (either deslimed or crushed only). The main implications from the bottle tests are to allow estimation of the acid to be added in agglomeration and the likely leach response of the large particle sizes; that contain composite particles. Results of these test were consistent with the mineralogy with high acid solubility and acid consumptions varying with carbonate content. The Figure 13-6 shows a typical result for the HMS Reject.

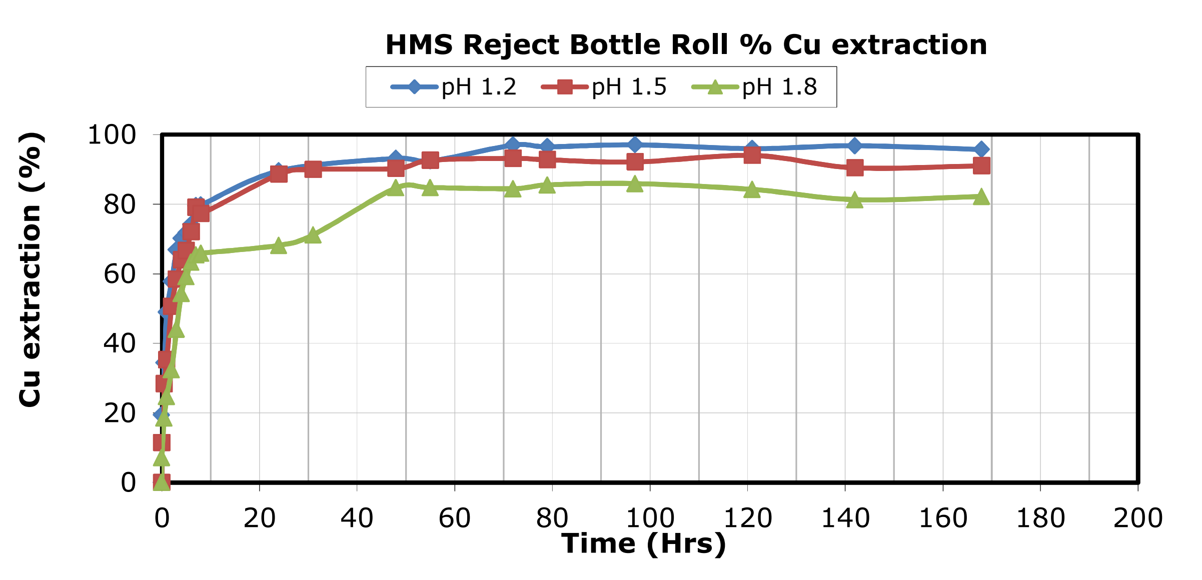

Figure 13-6 HMS Reject Bottle Roll % Cu Extraction

13.2.8 Agglomeration Tests

Initial agglomeration testing was undertaken usiing a standard matrix of conditions, to establish optimal moisture content, The moisture information was then combined with Acid consumption data derived from bottle roll tests. Acid addition in agglomeration was varied from 50% Gangue Acid Consumption (GAC) to 100% GAC.

Optimal moisture contents for agglomeration for the different ore types was

HMS Floats	8-9%
Kipoi Central	6%
Kipoi North	6-9%
Kileba	6-7%

13.2.9 Column Tests

The optimal agglomeration conditions were selected for each specific sample. Agglomeration was conducted and freshly agglomerated ore was loaded into the 1m or 6m columns. Representative raffinate solutions were generated at necessary acid concentrations for testing.

Short 1.0 m columns have been used to confirm the suitability of the heap leaching technique and provide input data to the tall 6.0 m column programme.

The HMS Floats has been tested at both 1.0 m and 6.0 m depths to assess the effect of parameters and the likely level of recovery possible.

13.2.10 Short Columns

The typical 1.0 m column results are shown below.

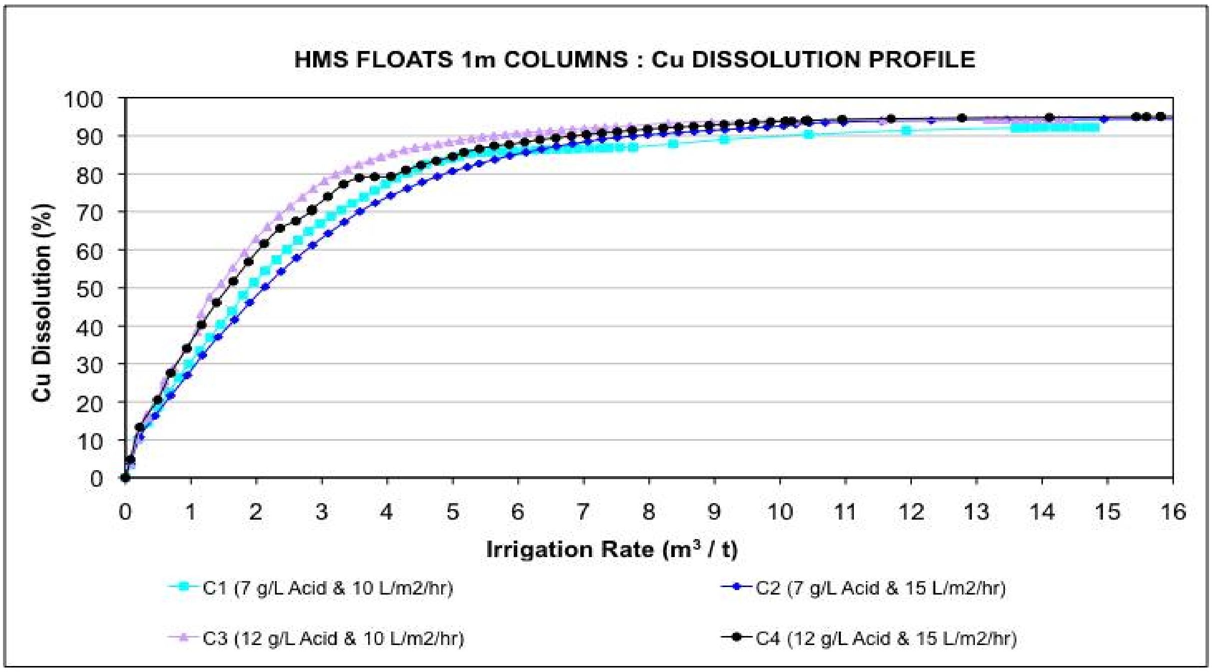

Figure 13-7 HMS Floats 1m Columns: Cu Dissolution Profile

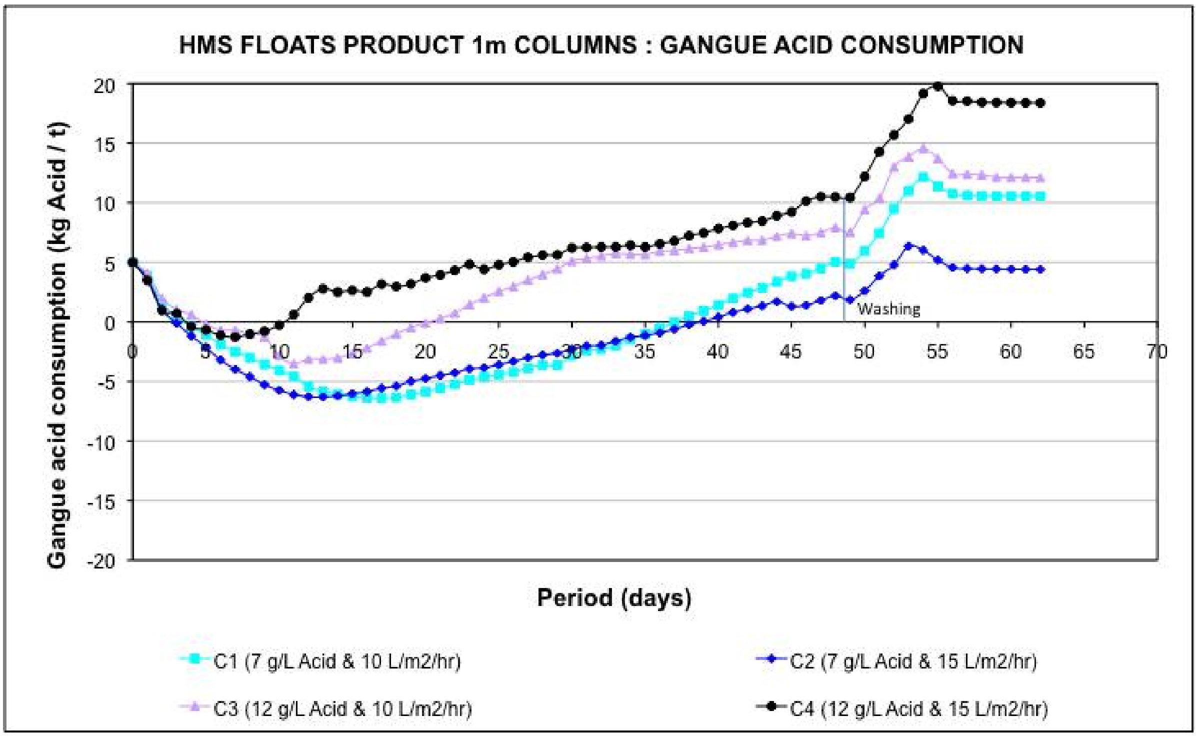

Figure 13-8 Acid Consumption Profiles

For all ore types there was a modest increase in slimes and this was also reflected in the good geo-mechanical characteristics of the leached ores

13.2.11 Tall Columns

The typical results of the two 6m tall columns are shown below.

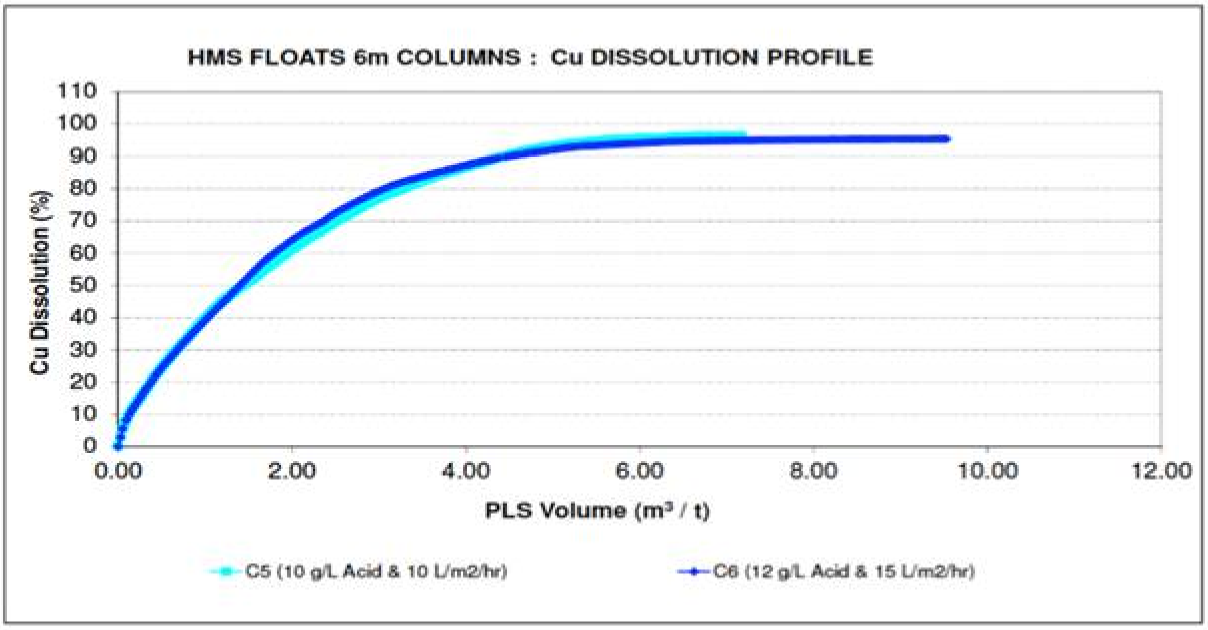

Figure 13-9 HMS 6m Columns: Cu Dissolution Profile

As for the 1m columns there was a very similar response to the extraction versus PLS flux rate. A comparison of 1m and 6m leach profiles is given below.

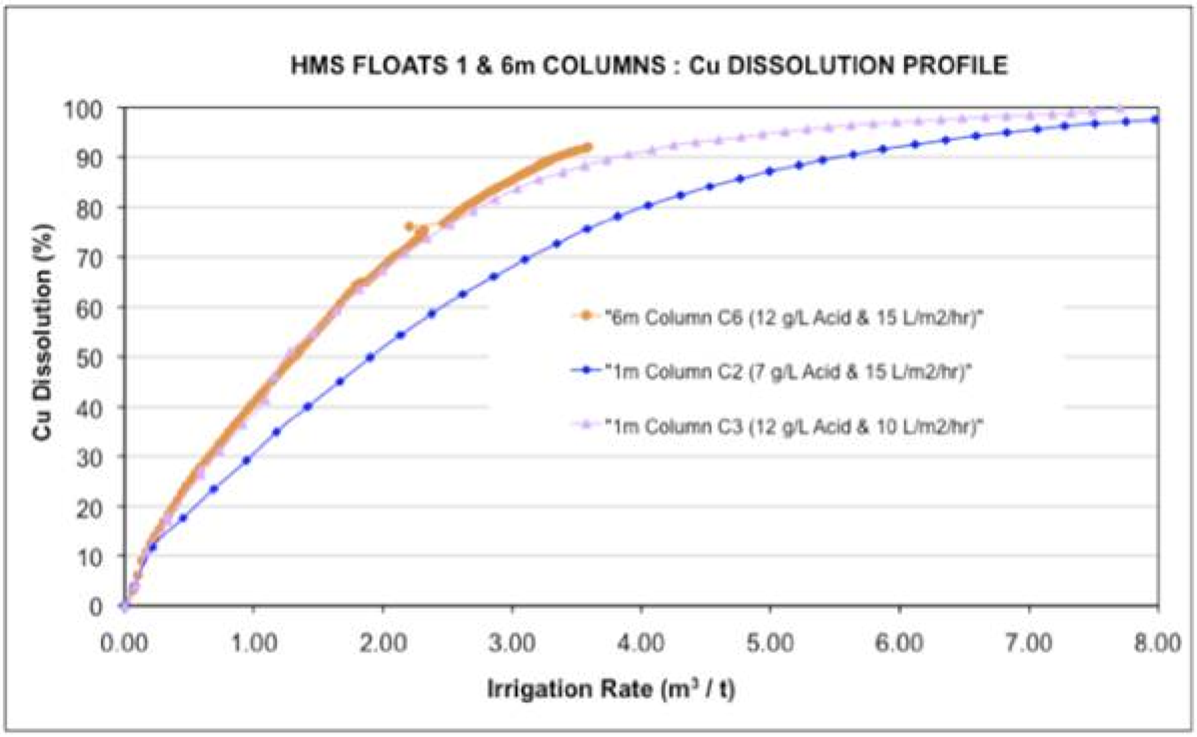

Figure 13-10 HMS 1 & 6m Columns

The acid consumption profiles are shown below, to gain a comparison of acid consumption profiles for the 1m and 6m column is provided below

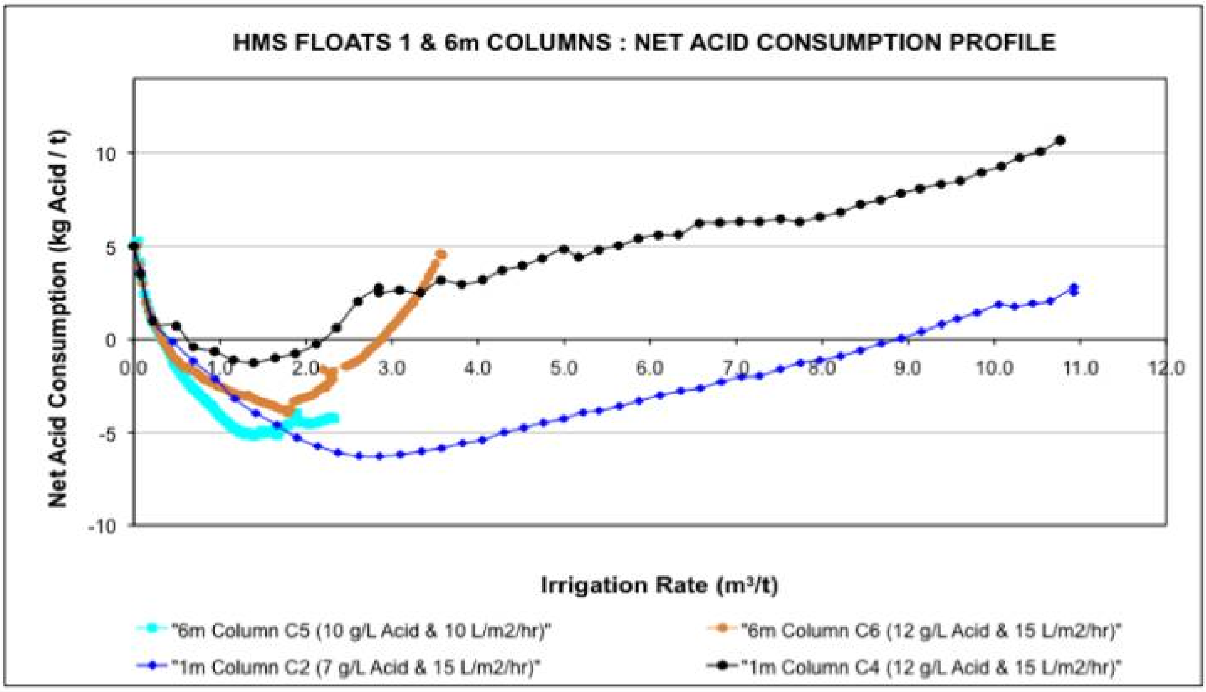

Figure 13-11 Net Acid Consumption Profile

13.2.12 Heap Leach Summary

The summary of the heap leaching estimates for operating conditions, recovery and NAC as defined by MMS are provided in Table 13.2

Deposit	Kipoi Central		Kipoi Central				Kipoi North				Kileba			
Ore Type	HMS Floats		C1	C2	C3	C4	C1		C2&4		C1		C2	
AS Cu %	97.4	97.4	100	100	75		87.3		95		94.8		98.8	
CnS Cu%	2.3	2.3	0	0	16		12.4		4.8		3.5		0.8	
Leach Cu %	99.7	99.7	100	100	91		99.7		99.8		98.3		99.6	
Grade Cu %	3.00%	3.00%	1.11%	0.93%	1.94%		2.04%	2.04%	1.67%	1.67%	2.41%	2.41%	1.64%	1.64%
Lift Ht m	6	4	6	6	6		2	4	2	4	3	4	3	4
Leach Time days	180	120	126	157	137		156	313	128	257	181	226	163	217
Recovery Cu %	90	90	85	80	85		80	75	90	90	80	75	80	75
NAC kg/t	29	11	13.9	9.2	7.7		39.1	78.1	16	32.1	45.2	56.6	28	28

Table 13.2 Heap Leach Summary

13.2.13 Geomechanical Column Tests

Geomechanical testing has been conducted on the column leach head and tail samples. Typical results indicated at 12m lift the void partitioning is still acceptable at 40%. This would indicate that the ore could be successfully leached once over-stacked with a second lift. At a 6m lift the conductivity is nearly an order of magnitude greater than the target (which is 100 x the target irrigation rate). At a 12m lift the hydraulic conductivities are still above the minimum target. This again indicates that leaching of an over-stacked lift could be possible with this material.

13.2.14 Agitated Leach Tests

Agitation leach testing of the composites was conducted in a number of preliminary small batch tests; prior to leaching of the bulk sample. The typical conditions for leaching were optimised with regard to target pH as shown Figure 13-3 Phase 3 Processing Plant.

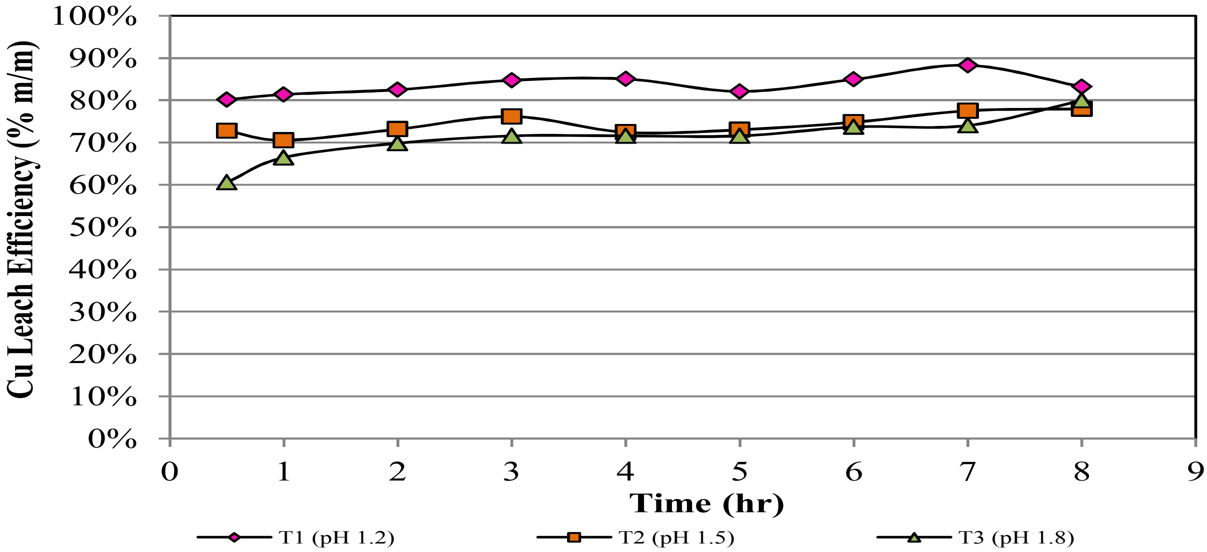

Figure 13-12 HMS Slime Leaching with Alternative pH Profile Targets

As can be seen the lower the pH target the higher the short term leaching but all results converge towards 81% to 83% recovery. This compares well with the sequential assay head that shows a possible recovery of 83% (being the acid leachable copper). Net acid consumption (NAC) was very low at an average of 2.5 kg/t for the three tests. The majority of acid is consumed within the first one hour providing little scope for optimisation.

The Bulk leach was conducted at a target pH of 1.5 to minimise the acid consumption and achieve realistic copper dissolution. The results of the test are shown Table 13.4.

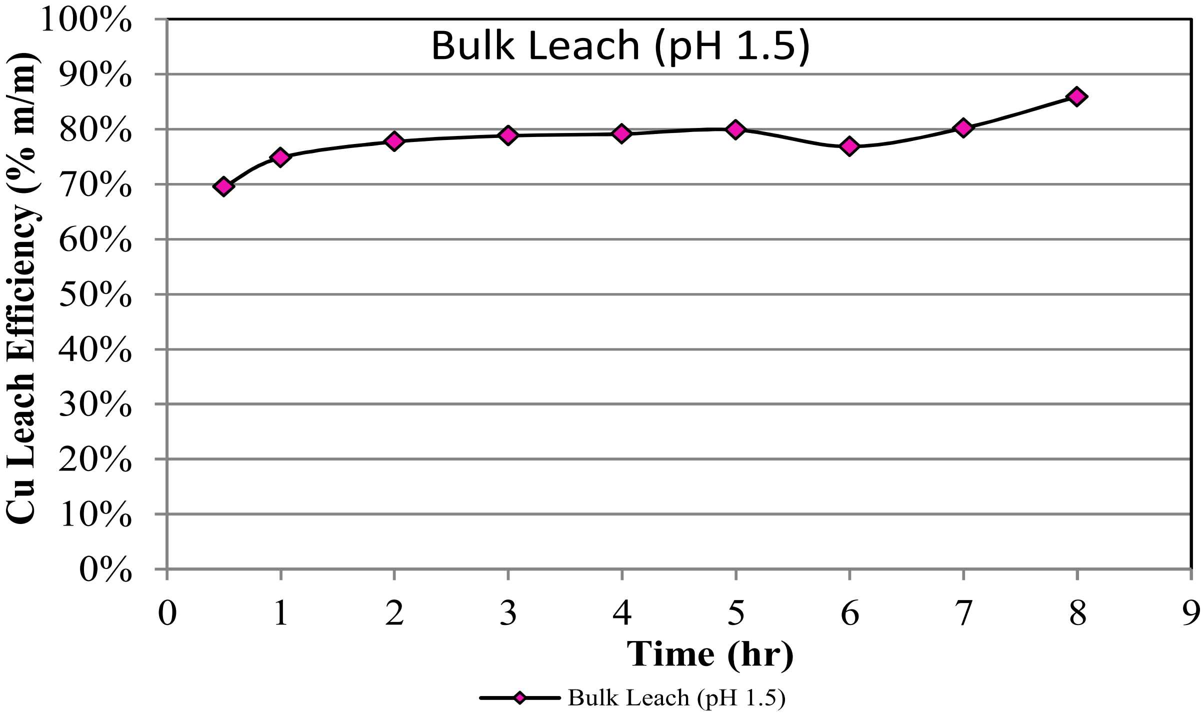

Figure 13-13 HMS Slimes and Bulk Leach

The loss of recovery from the potential acid soluble copper of 83% to the lower 80% is explained by the presence of significant Chysocolla in the feed sample. A recovery of 3% less than the acid soluble copper assay is a reasonable method of estimating the achievable leach recovery. Acid consumption in this test is shown in the Figure 13-14.

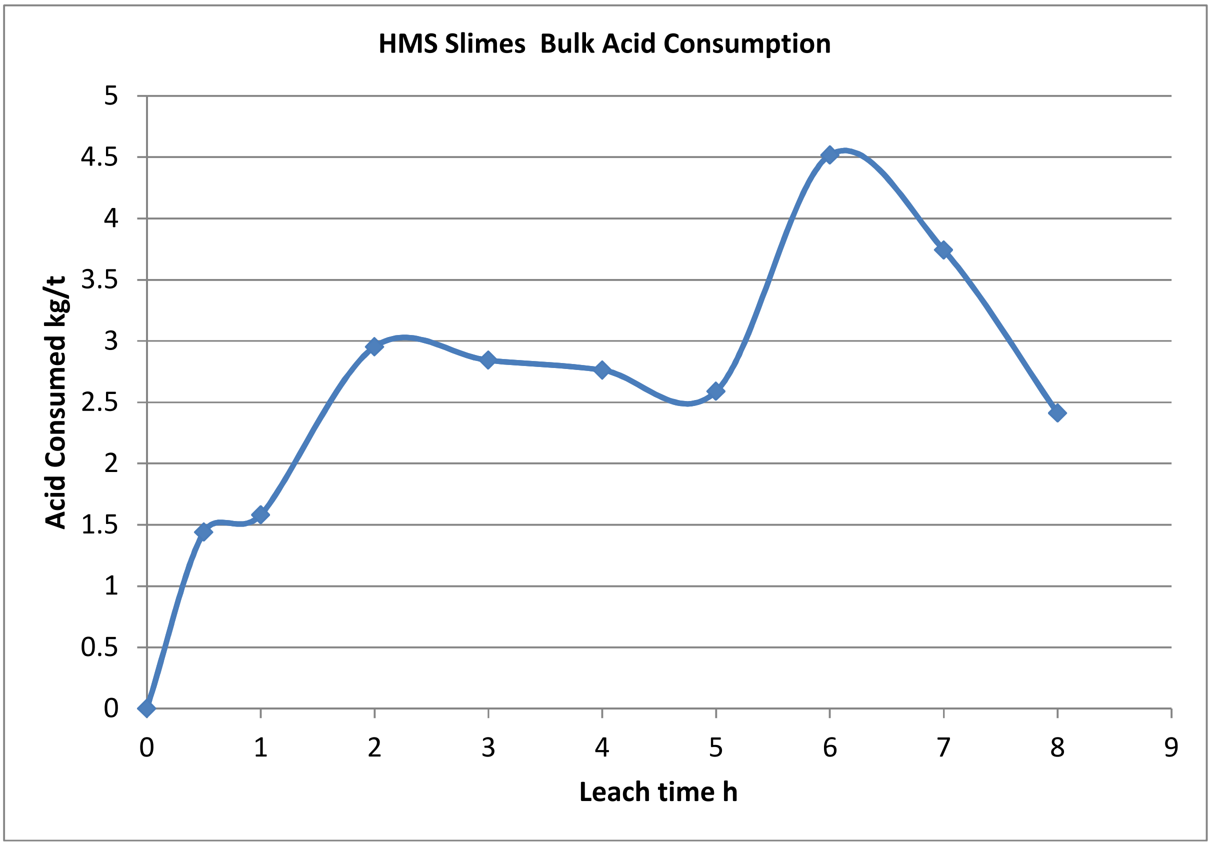

Figure 13-14 HMS Slime Bulk Leach Net Acid Consumption

The peak consumption is an artifact of the method of mass balancing. It is seen that the bulk of the consumption takes place in the first two hours with minimal real consumption thereafter.

13.2.15 Longer Term Leaching

A number of 'sighter' tests have been conducted on leached slimes residues to assess the potential effect of continued leaching in the tails storage facility (TSF). The bulk leach residue solids were allowed to stand without additional acid or agitation. The extra copper dissolution has been estimated from the increase in the solution copper grades.

Typical results are available for HMS slimes with the additional leach recoveries are provided in Figure 13-15

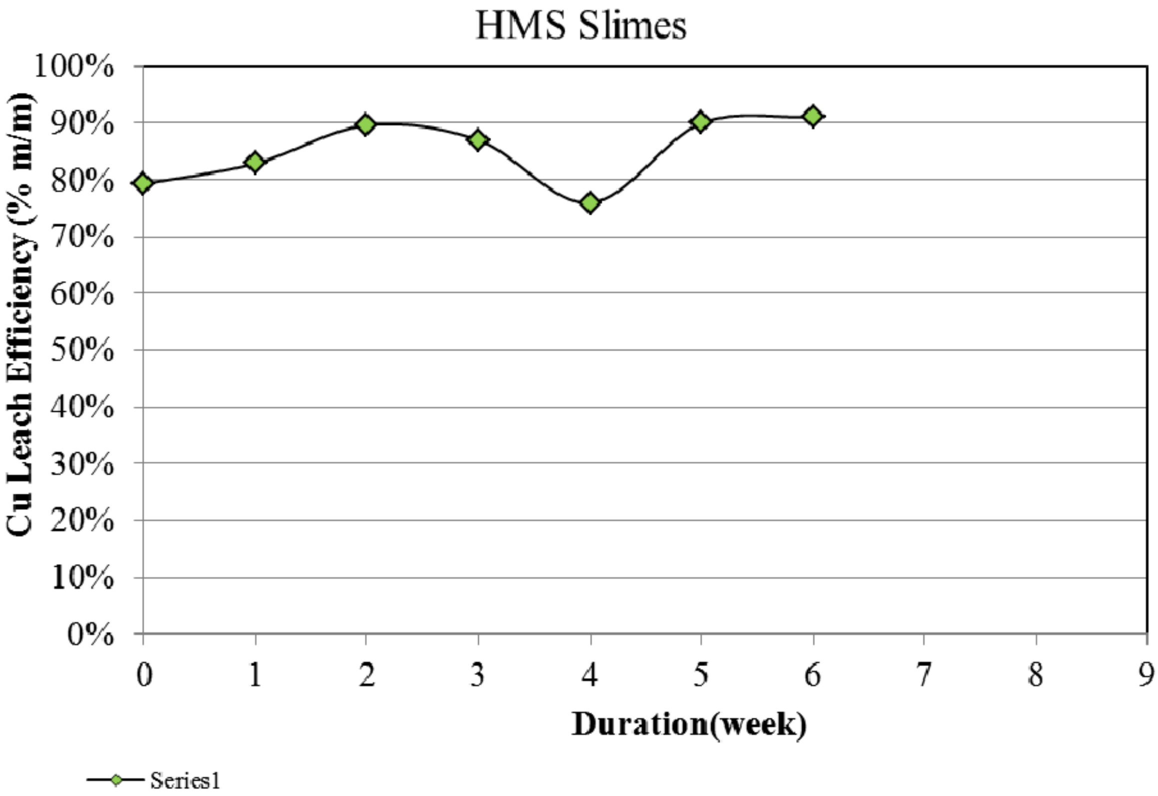

Figure 13-15 HMS Slimes Recovery

From the results it is expect the following increased TSF copper recovery.

Kipoi

- HMS + 50% of residue due to high Chrysocolla content
- C 1 +30% of residue with very low NAC
- C2 +30% of residue
- C3 +30% of residue with high chrysocolla

Kipoi North

- C1 +10% of residue due to high NAC
- C2&4 +30% of residue

Kileba

- C1 +10% of residue to high NAC
- C2 +30% of residue

13.2.16 Agitation Leaching Design Criteria

The design criteria developed from the test programmes are provided below. In all cases the results are consistent except for the acid consumption

- Target pH 1.5
- Leach time 2 hours (batch kinetics)
- Leach time calculated for No of reactors to provide 98% of batch result (= 4 h for 3 reactors)
- Recovery 98% of (ASCu/TotCu – minus 2%)

- NAC as tested kg/t (bench scale test only required)
- Limit of economic recovery for high acid consuming composites is likely to reduce the required leach time to one (1) hour or less; to minimise the acid consumption. This can be accomplished in one or two of the reactors required for other ore types.
- Acid addition pre-diluted to minimise consumption.
- Temperature ambient

During operations the characterisation of the ore is required on a continuous basis to determine the correct KPI's for the plant performance:

- Acid soluble copper
- Proportion of dolomite, chlorite etc and the Net Acid Consumption

The leach conditions, recovery and NAC estimates determined by MMS are provided below in Figure 13-16

AGITATION LEACH SUMMARY								
DEPOSIT	KIPOI	KIPOI CENTRAL			KIPOI NORTH		KILEBA	
ORE TYPE	*HMS Fines*	*C1*	*C2*	*C3*	*C1*	*C 2+4*	*C1*	*C2*
AS Cu %	99	100	96	64	83.1	90.3	92	97.5
Chalcocite (cc) Cu	0	0	0	26	11	0	3	0
Chrysocolla (cy) Cu	16	0	4	11	4.2	4.7	2.8	1.3
Leach Cu %	83	100	92	53	78.9	85.6	89.2	96.2
leach time h	4	4	4	4	2	4	2	4
CSTR Eff %	98%	98%	98%	98%	80%	98%	80%	98%
CCD Eff %	98%	98%	98%	98%	96%	96%	96%	96%
basic leach Rec%	79.7	96.0	88.4	50.9	60.6	80.5	68.5	90.5
Add cc Cu leach	0	0	0	3	0	0	0	0
TSF reside Rec %	50%	30%	30%	30%	10%	30%	10%	30%
Add long term Rec	10.1	1.2	3.5	13.8	3.9	5.8	3.1	2.8
O/A Rec %	**89.9**	**97.2**	**91.8**	**67.7**	**64.5**	**86.4**	**71.7**	**93.4**
NAC kg/t	**2.5**	**6**	**18**	**18**	**60**	**13**	**50**	**18**

Figure 13-16 Agitation Leach Summary

13.2.17 Thickening

Thickening tests were performed on all samples both in a pre-leach and post leach condition. The slurries were tested over a range of densities and with a range of flocculants to achieve optimal settling conditions.

The results are summarised in Figure 13-17 and Figure 13-18.

Deposit	Sample	Pre-Leach Settling Tests			
		Thickener Area		UF Solids	
				Density	Note
		m2.hr/t	t/m2/hr	%	
Kipoi Central					
	HMS Floats				
	Medium Grade (Oxide)	4.0	0.25	51-56	#
	HMS Fines (Oxide)	4.0	0.25	51-56	
	C1 (Pit 1, Oxide)	4.0	0.25	51-56	#
	C2 (Pit 2, Oxide)	4.0	0.25	51-56	#
	C3 (Transition)				
Kipoi North					
	C1 (Domain 1, Oxide)	1.8	0.556	54-58	
	C2&4 (Domain 2&4, Oxide)	2.0	0.5	52-56	
Kileba					
	C1 (Domain 1, Oxide)	2.5	0.4	50-53	
	C2 (Domain 2, Oxide)	4.0	0.25	45-50	
		# assumed based of KPC HMS Slimes			

Figure 13-17 Pre-Leach Settling Tests

Deposit	Sample	Post Leach Settling Tests			
		Thickener Area		UF Solids	
				Density	Note
		m2.hr/t	t/m2/hr	%	
Kipoi Central					
	HMS Floats				
	Medium Grade (Oxide)	2.0	0.25	52-56	
	HMS Fines (Oxide)	2.0	0.25	52-56	
	C1 (Pit 1, Oxide)	2.0	0.25	52-56	#
	C2 (Pit 2, Oxide)	2.0	0.25	52-56	#
	C3 (Transition)				
Kipoi North					
	C1 (Domain 1, Oxide)	5.8	0.173	47-51	
	C2&4 (Domain 2&4, Oxide)	3.5	0.286	49-55	
Kileba					
	C1 (Domain 1, Oxide)	6.7	0.15	46-51	
	C2 (Domain 2, Oxide)	6.1	0.163	45-51	
		# assumed based of KPC HMS Slimes			

Figure 13-18 Post Leach Settling Tests

13.2.18 Rheology

13.2.19 HMS Slimes

The Rheology testing done on all samples shows both for pre and post leach a typical pseudo plastic behaviour with viscosity decreasing with increasing shear. Yield stress also increases exponentially with solids concentration. The acidity in the post leach sample reduces the yield stress at higher solids concentrations (+25%)

13.2.20 Comminution

Results from the testwork for Impact Crushing were in the range 8.6 – 13.5 kWh/t

ABRASION INDEX TESTS	
Client	Abrasion
	Index
ID	AI
	(g)
Kipoi Central	0.0517
Composite 1	0.0432
Average	**0.0474**
Kipoi Central	0.0641
Composite 2	0.0702
Average	**0.0671**
Kipoi Central	0.0543
Composite 3	0.0401
Average	**0.0472**
Kipoi North	0.2900
Domain 1 Composite	0.2999
Average	**0.2950**
Kileba Domain	0.1675
2 Composite	0.1346
Average	**0.1510**

Table 13.3Abrasion Index Tests

A Sample of Kipoi Central ore was subjected to JK Drop Weight testing by JK Tech. Results indicated Kipoi has an A*b value of 81.3, which puts this material in the soft range of resistance to impact breakage. In the JKTech database, 80.8% of the 3,881 ore types contained in the JK database have lower A*b values.

With a ta of 1.10, Kipoi falls into the soft abrasion range compared with the other oretypes. In the JKTech database, 87.5% of the 3,974 ore types contained in the JK database have lower ta values.

The ores from Kipoi central are progressively harder with depth and with low abrasivity. Kipoi North ore is medium abrasivity with medium work index. Kileba ore has low to medium abrasivity and medium work index. Further sample testing is being undertaken on crushing and SMC characteristics.

13.2.21 Scale Up

13.2.22 Agitation Leaching

The scale up for agitation leaching is fundamentally simple provided that the level of agitation provided in the commercial plant is equivalent to that used in the laboratory. The summary of the leach parameters derived from the test work and the scale up are provided in Table 13.4.

AGITATION LEACH SUMMARY								
DEPOSIT	KIPOI	KIPOI CENTRAL			KIPOI NORTH		KILEBA	
ORE TYPE	*HMS Fines*	*C1*	*C2*	*C3*	*C1*	*C 2+4*	*C1*	*C2*
AS Cu %	99	100	96	64	83.1	90.3	92	97.5
Chalcocite (cc) Cu	0	0	0	26	11	0	3	0
Chrysocolla (cy) Cu	16	0	4	11	4.2	4.7	2.8	1.3
Leach Cu %	83	100	92	53	78.9	85.6	89.2	96.2
leach time h	4	4	4	4	2	4	2	4
CSTR Eff %	98%	98%	98%	98%	80%	98%	80%	98%
CCD Eff %	98%	98%	98%	98%	96%	96%	96%	96%
basic leach Rec%	79.7	96.0	88.4	50.9	60.6	80.5	68.5	90.5
Add cc Cu leach	0	0	0	3	0	0	0	0
TSF reside Rec %	50%	30%	30%	30%	10%	30%	10%	30%
Add long term Rec	10.1	1.2	3.5	13.8	3.9	5.8	3.1	2.8
O/A Rec %	**89.9**	**97.2**	**91.8**	**67.7**	**64.5**	**86.4**	**71.7**	**93.4**
NAC kg/t	**2.5**	**6**	**18**	**18**	**60**	**13**	**50**	**18**

Table 13.4 Agitation Leach Summary

13.2.23 Heap Leaching

The scale up method used for heap leaching in this work is based on selecting the combined effect of various parameters on the underlying diffusion leach rate. If appropriate a recovery cut off is applied if an acid consumption economic limit is identified.

The present work allows a range of parameter values to be used to explore the likely effects of changed conditions in the field

13.2.24 Scale up of Leach Rates to Commercial Practice.

The scale of leach rates have been done based on the tested conditions and the anticipated conditions in the field. As discussed above the major scale factors taken into account are:

- Bulk density
- Ore grade
- Lift height
- Acid concentration
- Heterogeneity factor between columns and field.

14.0 MINERAL RESOURCE ESTIMATES

An updated Kipoi Central Mineral Resource estimate was completed by Cube, in April 2012. The total insitu Kipoi Central Mineral Resource estimate in Table 14.1 was depleted for mining as at 31st March 2012. Table 14.2 summarises the Kipoi Central Mineral Resource as at 31st March 2012 within Stage II only.

An updated Kileba Mineral Resource estimate in Table 14.3 was completed by Cube, in August 2012.

An updated Kipoi North Mineral Resource estimate in Table 14.4 was completed by Cube in November 2012.

Table 14.1, Table 14.2, Table 14.3 are reported above 0.5% Cu cut-offs and subject to minor rounding errors.

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Measured	Oxide	2.0	4.5	91	0.2	4.6
	Transitional	0.5	4.5	20	0.1	0.3
	Sulphide	0.8	5.0	42	0.1	0.7
	Total	3.3	4.6	153	0.2	5.6
Indicated	Oxide	10.9	1.3	138	0.1	8.5
	Transitional	4.9	1.6	76	0.1	3.1
	Sulphide	4.7	2.4	113	0.1	2.9
	Total	20.5	1.6	327	0.1	14.5
Measured + Indicated	Oxide	12.9	1.8	229	0.1	13.1
	Transitional	5.4	1.9	96	0.1	3.4
	Sulphide	5.5	2.8	155	0.1	3.6
	Total	23.8	2.0	479	0.1	20.1
Inferred	Oxide	4.2	1.0	42	0.1	4.5
	Transitional	1.1	1.0	12	0.1	1.1
	Sulphide	2.6	1.1	28	0.1	3.5
	Total	7.9	1.0	82	0.1	9.1

Table 14.1Total Kipoi Central Mineral Resource Tabulation > 0.5% Copper, April 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Measured	Oxide	0.0	0.0	0	0.0	0.0
	Transitional	0.1	1.5	1	0.0	0.0
	Sulphide	0.1	2.4	3	0.1	0.1
	Total	**0.2**	**2.0**	**4**	**0.1**	**0.1**
Indicated	Oxide	10.0	1.2	124	0.1	6.3
	Transitional	4.8	1.5	73	0.1	3.0
	Sulphide	4.6	2.3	109	0.1	2.8
	Total	**19.4**	**1.6**	**306**	**0.1**	**12.1**
Measured + Indicated	Oxide	10.0	1.2	124	0.1	6.3
	Transitional	4.9	1.5	74	0.1	3.0
	Sulphide	4.7	2.3	112	0.1	2.9
	Total	**19.6**	**1.6**	**310**	**0.1**	**12.2**
Inferred	Oxide	4.2	1.0	42	0.1	4.5
	Transitional	1.1	1.0	12	0.1	1.1
	Sulphide	2.6	1.1	28	0.1	3.5
	Total	**7.9**	**1.0**	**82**	**0.1**	**9.1**

Table 14.2 Stage II Kipoi Central Mineral Resource Tabulation > 0.5% Copper, April 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Indicated	**Oxide**	6.0	1.46	87.0	0.06	3.4
	Transitional	2.1	1.60	33.2	0.05	1.0
	Sulphide	0.5	1.43	8.0	0.04	0.2
	Total	**8.6**	**1.49**	**128.2**	**0.05**	**4.6**
Inferred	**Oxide**	0.7	0.81	6.1	0.04	0.3
	Transitional	0.5	0.78	3.6	0.04	0.2

	Sulphide	1.0	1.75	17.7	0.04	0.4
	Total	**2.2**	**1.23**	**27.4**	**0.04**	**0.9**

Table 14.3 Total Kileba Mineral Resource Tabulation > 0.5% Copper, August 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Indicated	Oxide	3.4	1.36	46.1	0.05	1.6
	Transitional	0.5	1.21	6.4	0.03	0.2
	Sulphide	0.1	1.05	1.0	0.04	0.0
	Total	4.0	1.33	53.5	0.05	1.8
Inferred	Oxide	0.4	1.20	4.1	0.04	0.2
	Transitional	0.4	1.06	3.9	0.03	0.1
	Sulphide	0.3	1.05	3.6	0.03	0.1
	Total	1.1	1.10	11.6	0.03	0.4

Table 14.4 Total Kipoi North Mineral Resource Tabulation > 0.5% Copper, November 2012

14.1 Kipoi Central

The update of the resource estimate for Kipoi Central was completed by Cube during March and April 2012 and is an update of the estimate previously reported in the NI43-101 Technical Report dated November 2011. The objective of the estimation was to produce an updated local recoverable model of copper and cobalt mineralisation for the Kipoi Central Project.

Tiger provided Cube with a validated Microsoft Access drillhole database with the final data cut-off set at 2nd April 2012. Cube completed limited additional data validation checks prior to compositing the data for estimation. These validations included checks for discrepancies in maximum depths between collar, assay, survey and geology records.

Five RC and 12 diamond core (DC) holes had been completed since the Mineral Resource dated November 2011, along with 1,579 grade control RC holes. All additional drilling including grade control was utilised in the Mineral Resource update.

14.1.1 Geological Interpretation and Domaining

The geological frame work was based on the summary logging of the diamond drill core by Simon Dorling from CSA Global and onsite SEK geological personnel. Sampling method, sample security and assay data quality assurance and control was the responsibility of SEK with all results reviewed by Cube. Routine validation checks and QAQC analysis of the assay data was undertaken by Cube prior to the data being used in the Mineral Resource update.

The main mineralised Cu domain was interpreted using a combination of geological logging to define the key geological, weathering and mineralogical surfaces and a nominal lower cut-off grade of 0.25 to 0.30% Cu. The interpretation was an attempt to encompass the complete mineralised distribution and produce a model that reduces the risk of conditional bias often introduced where the constraining interpretation and data selection is based on a significantly higher grade than the natural geological grade cut-off (Figure 14-1).

Polygonal outlines have been used to sub-domain the total Cu mineralisation into 2 areas dominated by high and low grade mineralisation which is summarised in Table 14.5 and displayed in Figure 14-1 and Figure 14-2. The lower grade sub-domain is dominated by composite grades of Cu typically less than 2%. The higher grade sub-domain (200) encompasses the western portion of mineralisation and the lower grade sub-domain (300) the eastern portion. An area of overlap exists between domain 200 and 300 to help avoid any step changes in grade estimation. A third sub-domain (GC_200) has been defined to encompass the volume of material defined by the close spaced grade control data and includes a 10m halo around this volume. This volume is totally encompassed within domain 200.

Domain	Description	DTM name
100	Total Cu Mineralisation	min_cu_apr_2012.dtm
200	Higher Grade Cu Mineralisation	Inside min_cu_apr_2012 & inside hg_lg_areas_2100.dtm (obj. 1).
GC_200	Sub Set of 200 Defined by GC Drilling	10m halo surrounding grade control data within domain 200.
300	Lower Grade Cu Mineralisation	Inside min_cu_apr_2012 & inside hg_lg_areas_2100.dtm (obj. 2).

Table 14.5 Mineralisation Domains

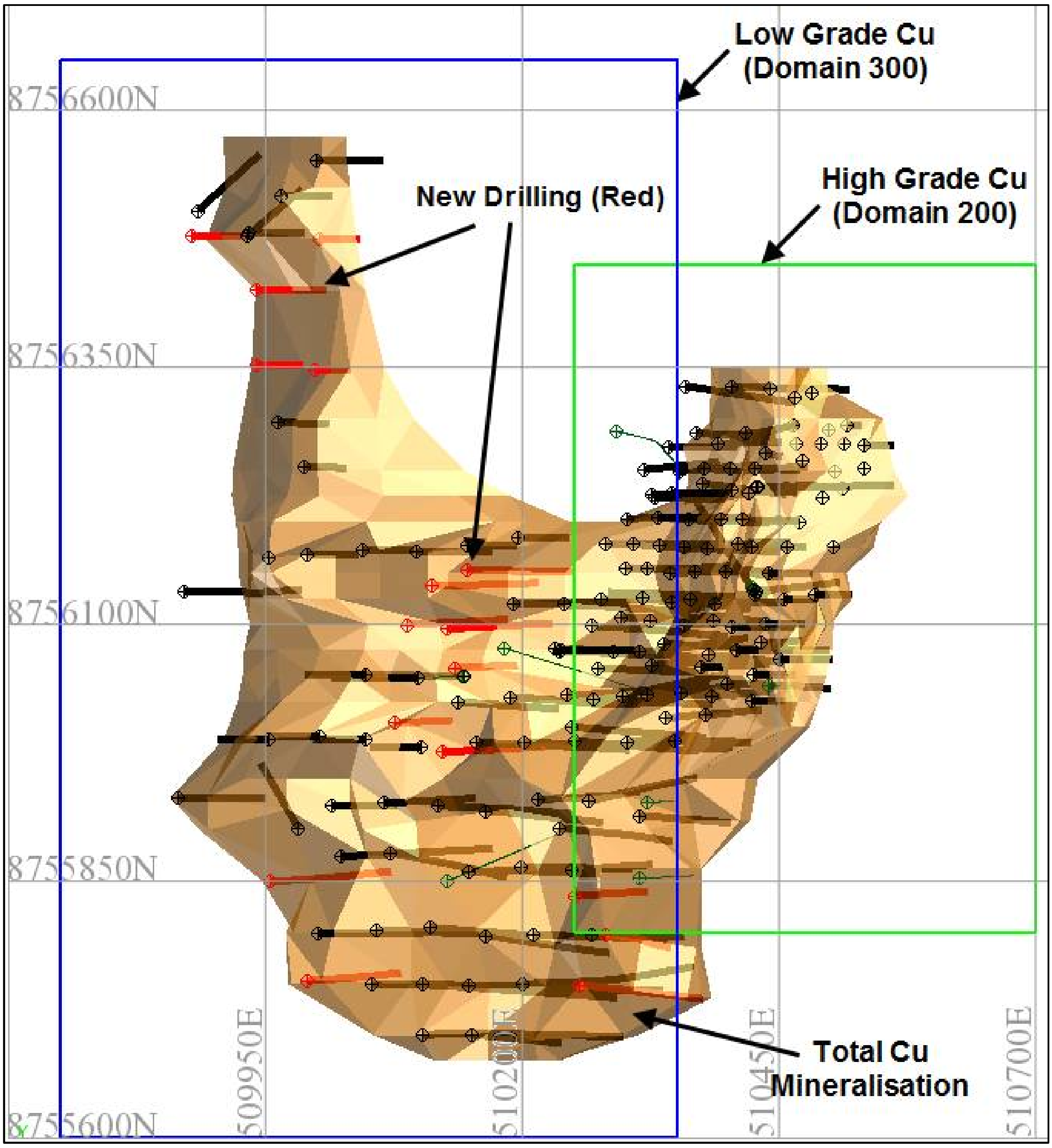

Figure 14-1 Copper Mineralisation with High (200) and Low (300) Cu Sub-Domains

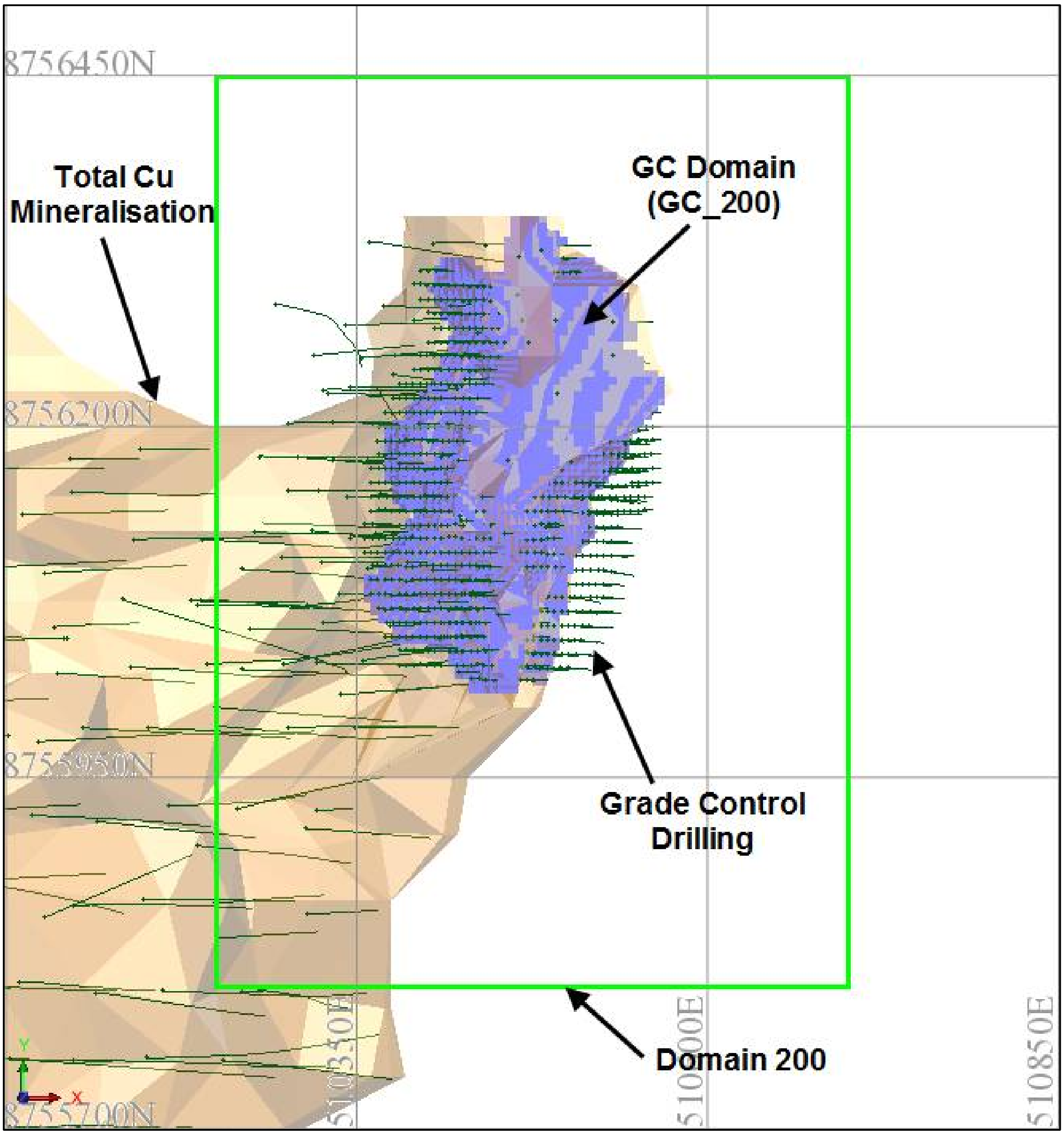

Figure 14-2 Copper Mineralisation with Grade Control Sub-Domain (GC_200)

14.1.2 Mineral Resource Estimation

All estimation work was undertaken using SURPAC mining software and Isatis geostatistical software. The estimation was initially undertaken utilising Ordinary Kriging of 5m downhole composited drilling data into a 3D block model with panel size being 25m by 25m by 5m. Based on the Quantitative Kriging Neighbourhood Analysis (QKNA) and visual analysis of the samples selected under OK, appropriate search parameters were chosen as detailed below in Table 14.6.

Domain	Attribute	Min Comp	Max Comp	Range (m)	Isatis Rotation (Geologist Convention)	Maj/Semi Maj	Maj/Min
200	Cu	4	24	150	100°/10°/-90°	2	4
300	Cu	4	24	250	10°/-70°/0°	1	5.5
200	Co	4	24	150	100°/10°/-90°	2	4
300	Co	4	24	250	10°/-70°/0°	1	5.5
GC_200	Cu	4	12	80	100°/10°/-90°	2	4
GC_200	Co	4	12	80	100°/10°/-90°	2	4

Table 14.6 OK Search Ellipsoid Parameters – Copper and Cobalt

An estimation of copper and cobalt using the Localised Uniform Conditioning methodology (LUC) was undertaken to achieve an appropriate local recoverable resource estimate of copper and cobalt suitable for mine planning purposes based on an SMU size of 5m x 5m x 2.5m and a selection of grade cut-offs. Once the LUC estimates were completed, the results were imported into a final 3D block model with panel size being 5m by 5m by 2.5m.

In addition, the LUC estimates for copper and cobalt were estimated to account for the Information Effect. Estimation of the minor elements used OK methodology to provide global background grades for the Kipoi Central Mineral Resource model.

14.1.3 Weathering

The weathering characteristics for all drilling at Kipoi Central was geologically logged and recorded in the database. In addition, sulphur (%) is recorded as part of the assay suite. Both of these data have been used in the development of the Base of Oxidation (BOCO) and Top of Fresh (TOF) geological surfaces and produced a weathering profile model classified into three domains as outlined below in Table 14.7.

Domain	Ox state	Description	Logging Code	Cu/S ratio	Sulphides	Position
Oxide	3	Rock fabric is completely oxidised	W5 to W3	Cu >>S S<0.1%	None present	Above BOCO
Transition	2	Partial oxidation, rock fabric may appear fresh in part	W2	Cu > S (1:1)	Secondary supergene minerals present and primary sulphides may also be present.	Between BOCO and TOF
Fresh	1	Rock fabric unaffected by weathering	W1	Cu < S (1:2)	Primary sulphides	Below TOF

Table 14.7 Weathering Classification

14.1.4 Density

Bulk density was determined using the immersion method where dried core samples are weighed in and out of water. The core was coated in wax when it was deemed to be porous by the field staff. An inherent risk with bulk density determinations undertaken in weathered rock is the tendency for the measurements to be completed on the more competent pieces of core within each core tray. This may result in the mean bulk density measurements being biased high as compared to the true insitu density for oxidised material.

To overcome this, during the mining of the Stage 1 pit, a series of insitu bulk density determinations were made utilising two different methods. Firstly, small holes were excavated with a hand shovel on the mining benches with the weight (wet and dry) of the material being removed measured. The hole was then lined with plastic and the volume of the hole determined by filling it with water. The second method involved digging a larger hole using the mine excavator, measuring the weight of material using trucks over a weigh-bridge and finally surveying the volume of material mined. These measurements were used to determine a bulk density for oxidised rock for a variety of rock types. These results are considered to be more representative of the true bulk density than those determined on core.

The final bulk density values for the Kipoi Central prospect were assigned on the basis of rock type and oxidation state for the fresh and transitional material. These values were determined by grouping the bulk density data according to lithology and oxidation state and calculating the mean for each sample population. For oxide material the bulk density was assigned according to rock type, oxidation state and also elevation. These assigned values were determined by modifying the mean of the density sample data to honour information gained from in pit measurements during mining. The density values assign to fresh and transitional material are summarised in Table 14.8 and for oxide in Table 14.9.

Oxidation (wx_code)	Lithology (geol_code)	Assigned Density (t/m3)
Transitional (2)	SLT	2.5
	COZ	2.5
	DOL	2.55
	BH	2.6
	TIL	2.4
	PYR	2.5
	BKGR	2.5
Fresh (1)	SLT	2.65
	COZ	2.65
	DOL	2.65
	BH	2.65
	TIL	2.5
	PYR	2.6
	BKGR	2.65

Table 14.8 Kipoi Central Model Specific Gravity – Transitional and Fresh

Oxidation (wx_code)	Lithology (geol_code)	Above 1300RL	1300 to 1275RL	1275 to 1250RL	1250 to 1225RL	Below 1225RL
Oxide (1)	SLT	1.98	2.11	2.23	2.36	2.48
	TIL	2.00	2.25	2.25	2.38	2.40
	DOL	1.96	2.08	2.21	2.33	2.45
	COZ	1.79	1.84	2.07	2.19	2.30
	BH	1.72	1.83	1.94	2.04	2.15
	PYR	1.92	2.04	2.16	2.28	2.40
	BKGR	2.20	2.25	2.30	2.35	2.40

Table 14.9 Kipoi Central Model Specific Gravity - Oxide

14.1.5 Model Depletion

The final block model was depleted using two DTM surfaces representing pre-mining topography and also the topography inclusive of surface mining as at the end of March 2012. The block model attribute coded for depletion is called “depletion” and has been coded according to Table 14.10.

Material Below DTM	Material Above DTM	"*depletion*" Code
-	kipoi_topo_apr2012.dtm	2 (air)
kipoi_topo_apr2012.dtm	pitall_104.dtm	0 (mined)
kipoi_topo_apr2012.dtm	-	1 (remaining insitu)

Table 14.10 Block Model Depletion

14.1.6 Mineral Resource Classification

The Kipoi Central Mineral Resources estimated in April 2012 are intended for public reporting to form the basis for the Kipoi Copper Project Stage 2 DFS and have been classified and reported in accordance with the CIM guidelines (CIM 2005) and National Instrument NI 43-101. Reporting of the total insitu Kipoi Central Mineral Resource in this report has used the 31st March 2012 topographical surface for depletion. The Kipoi Central Mineral Resource contributing to the Stage II DFS only includes material outside the current Stage 1A and 1B pits.

Cube has undertaken a LUC estimate of the copper and cobalt resources with an assumption of an open pit mining SMU of 5m x 5m x 2.5m and believes this approach yields an appropriate model of the mineralisation, suitable for mine planning purposes.

It is Cube's conclusion that the Kipoi Central mineralisation is sufficiently drilled to allow classification. As with any non-rigidly defined classification there will always be some blocks within categories that depart from defined criteria. It is Cube's view that the final outcome must reflect a practical combination of geological knowledge, operational experience and estimation quality parameters that may be more numerical in nature. This approach to classification aims to avoid creating a complex numerically based 'mosaic'. Cube has considered all criteria and has classified the resource accordingly to include Measured, Indicated and Inferred.

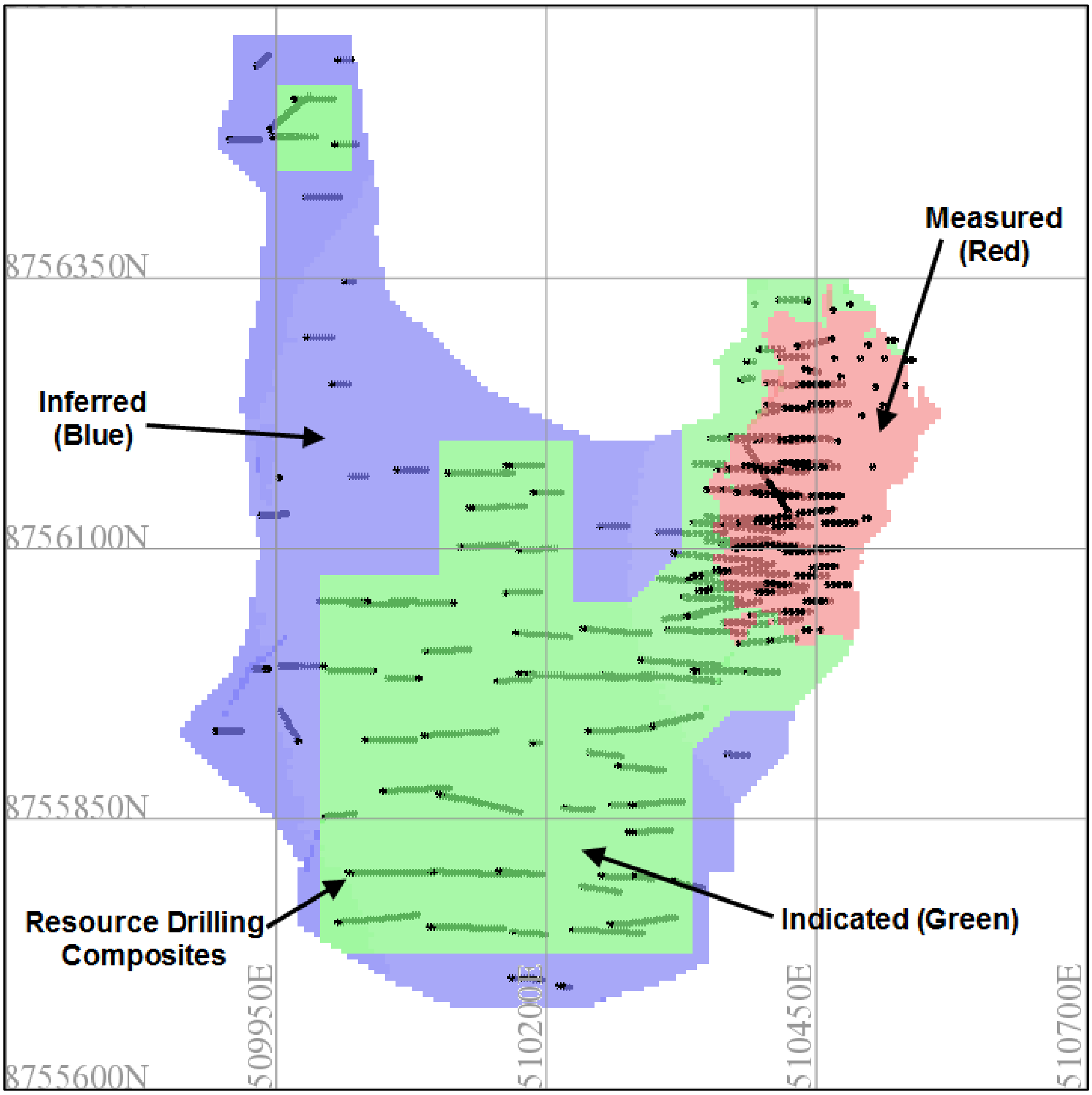

Figure 14-3 KPC Resouce Classification

14.1.7 Reconciliation

14.1.8 Grade Tonnage Curve

Grade tonnage curves for the insitu Kipoi Central Stage 2 Mineral Resources for combined oxide and transitional material is presented below in Figure 14-4 and sulphide in Figure 14-5.

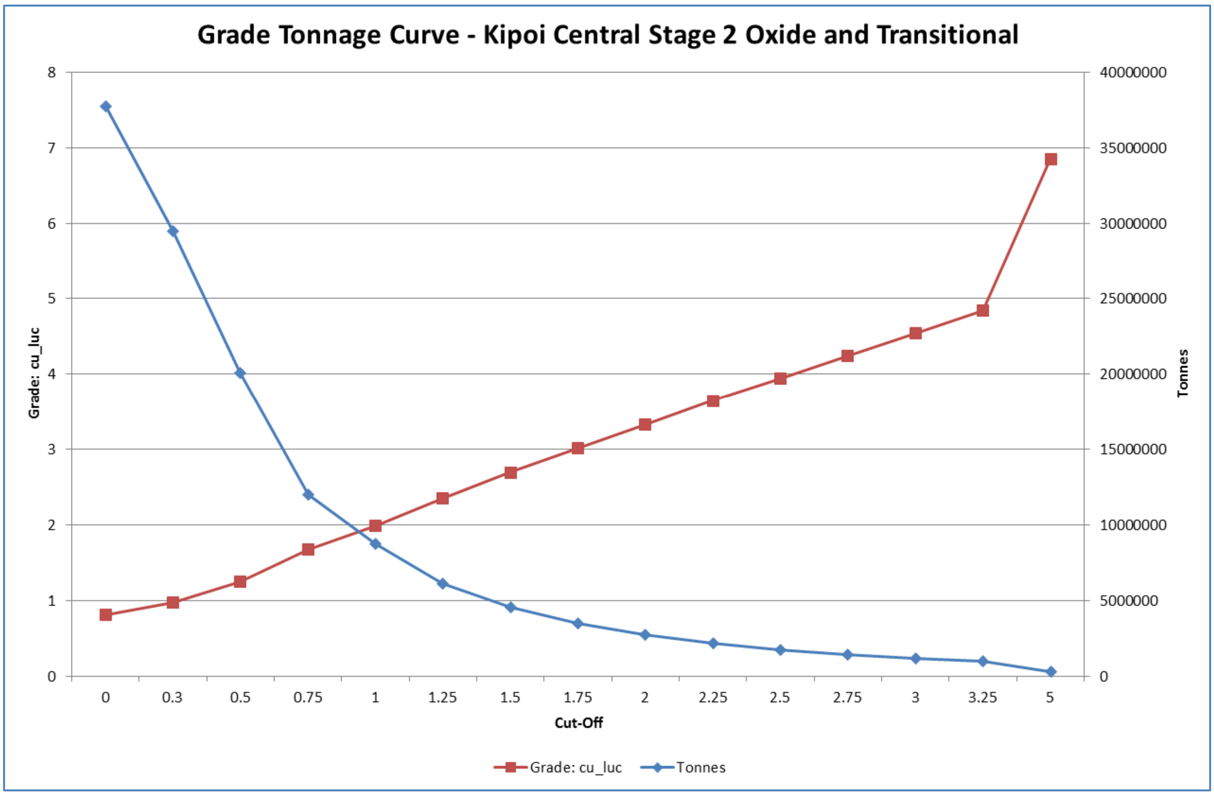

Figure 14-4 Grade Tonnage Curve – Kipoi Central Stage 2 Oxide and Transitional

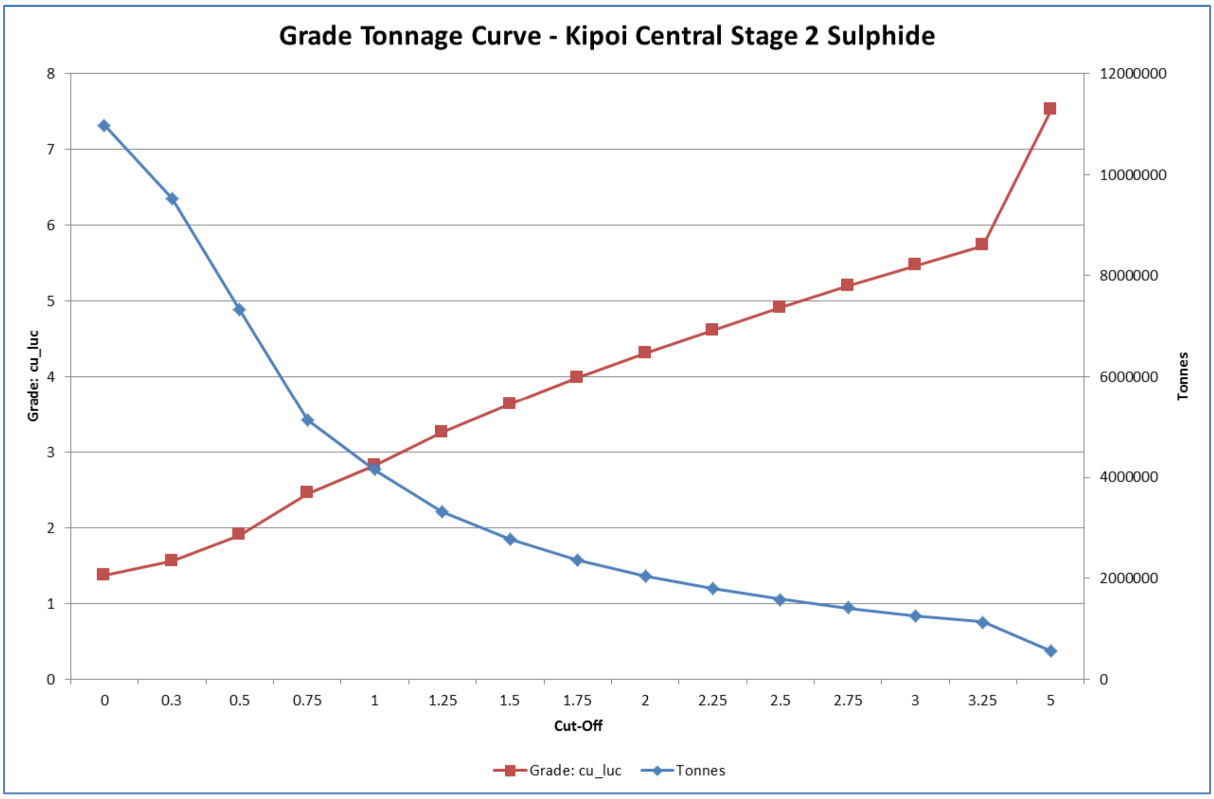

Figure 14-5 Grade Tonnage Curve – Kipoi Central Stage 2 Sulphide

14.2 Kileba

The resource estimate for Kileba was completed during August 2012 by Cube and is an update of the Mineral Resource estimate completed in April 2009 by CSA Global (Williams 2009). The objective of this work was to up-date the global copper (Cu) and cobalt (Co) estimates for public reporting and to produce a local recoverable model of Cu and Co for the Kileba project. Recent drilling at Kileba included 64 diamond drill holes for 8,296m which focused on infilling the Southern mineralisation to a nominal 25m x 25m drill spacing. No additional drilling was completed in the smaller Northern domain. This domain is tested at a nominal 100m x 25m drill spacing.

14.2.1 Geological Interpretation and Domaining

The interpretation of lithological domains was based on work completed by Simon Dorling a consultant for CSA Global in collaboration with SEK site geologists and Cube. Sampling method, sample security and assay data quality assurance and control has been the responsibility of SEK with the results reviewed by Cube.

The mineralisation strikes to the northwest and dips steeply to the southwest and is hosted predominantly in dolomitic siltstones of the upper R4 sub-group of the Roan Group sediments. At approximately 8752700N the mineralisation is separated into the Southern and Northern domains. The southern mineralisation has been the focus for the recent infill drilling and displays higher grades within a single larger volume compared to the northern mineralisation characterised by three narrow domains. The mineralisation interpretation is based on a nominal lower cut-off grade of 0.25 to 0.30% Cu and includes all recent drilling. The updated interpretation was an attempt to encompass the complete mineralised distribution and produce a model that reduces the risk of conditional bias often introduced where the constraining interpretation and data selection is based on a significantly higher grade than the natural geological grade cut-off (Table 14.11 and Figure 14-6).

Domain	Description	DTM name
10	Southern Domain	cube_kil_min_aug_2012.dtm
11	Northern Domains	
12		
13		

Table 14.11 Mineralisation Domains

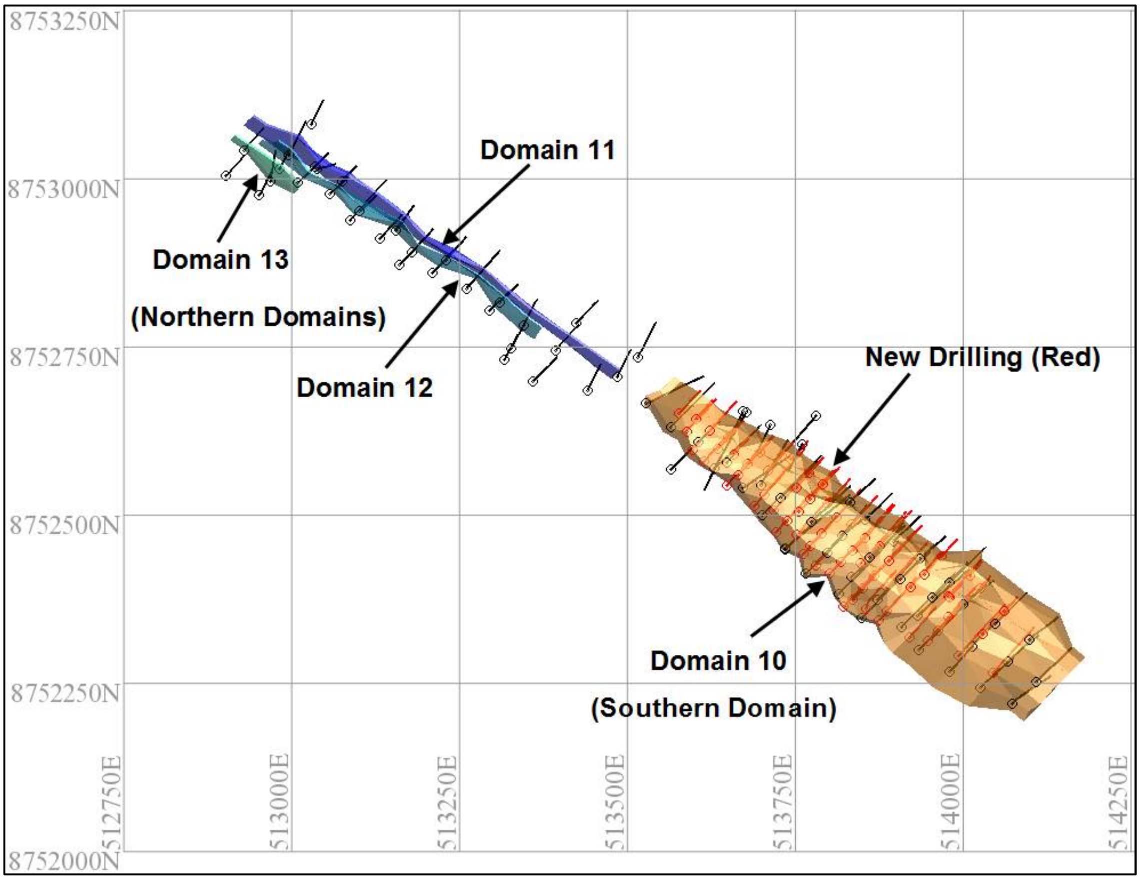

Figure 14-6 Copper Mineralisation Divided into Northern and Southern Domains – Plan View

14.2.2 Mineral Resource Estimation

Cube used Ordinary Block Kriging to estimate copper and cobalt grades. Two different panel sizes were defined for the Northern and Southern domains due to the differing estimation techniques adopted for each. Copper and cobalt were estimated for the Southern domain using 5m composites within 20mN x 20mE x 5mRL panels. A further process of Localised Uniform Conditioning (LUC) was applied to produce a model suitable for reporting above grade cut-offs and for mine planning based on an SMU size of 5m x 5m x 2.5m. The LUC incorporated an Information Effect correction to allow for the effect of incomplete information on the local recoverable model. Within the Northern domains, copper and cobalt were estimated using 2.5m composites and OK only and no post processing within 10mN x 10mE x 2.5mRL parent cells. Based on the QKNA and visual analysis of the samples selected, appropriate search parameters were chosen as detailed below in Table 14.12.

Domain	Attribute	Min Comp	Max Comp	Range (m)	Isatis Rotation (Geologist Convention)	Maj/Semi Maj	Maj/Min
10	Cu	4	24		125°/70°/0°	1	1
10	Co	4	24		125°/70°/0°	1	1
11	Cu	5	25	60	0°/0°/0°	1	1
11	Co	5	25	60	0°/0°/0°	1	1
12	Cu	5	25	60	0°/0°/0°	1	1
12	Co	5	25	60	0°/0°/0°	1	1
13	Cu	5	25	60	0°/0°/0°	1	1
13	Co	5	25	60	0°/0°/0°	1	1

Table 14.12 OK Search Ellipsoid Parameters – Copper and Cobalt

14.2.3 Weathering

The weathering characteristics for all drilling at Kileba was geologically logged and recorded in the database. In addition, sulphur (%) is recorded as part of the assay suite. Both of these data have been used in the development of the Base of Oxidation (BOCO) and Top of Fresh (TOF) geological domains in a similar approach to that process used at Kipoi Central.

14.2.4 Density

Bulk density values for Kileba were assigned on the basis of rock type and oxidation state. These values were determined by grouping both the diamond core and small pit bulk density data according to lithology and oxidation state and calculating the mean for each sample population. The final assigned values were determined by modifying the mean of the density sample data to honour all available information including knowledge gained from in pit measurements during mining at Kipoi Central. The density values assign for Kileba are summarised in Table 14.13.

Oxidation (wx_code)	Lithology (geol_code)	Assigned Density (t/m3)
Oxide (3)	sw_slt	1.9
	se_carb	1.9
	se_slt	1.9
	se_bx	1.9
	ne_slt	1.9
	nw_slt	1.9
	nw_carb	1.9
	se_til	1.9
	und_slt	1.9
Transitional (2)	sw_slt	2.46
	se_carb	2.42
	se_slt	2.34
	se_bx	2.30
	ne_slt	2.37
	nw_slt	2.32
	nw_carb	2.20
	se_til	2.34
	und_slt	2.46
Fresh (1)	sw_slt	2.72
	se_carb	2.76
	se_slt	2.78
	se_bx	2.78
	ne_slt	2.70
	nw_slt	2.72
	nw_carb	2.76
	se_til	2.77
	und_slt	2.72

Table 14.13 Kileba Model Specific Gravity

14.2.5 Model Depletion

No material mining has been undertaken at Kileba, except for some minor artisanal workings on the north eastern side of the Southern domain. The final block model has been flagged to reflect the topographical survey DTM as at the 10th August 2012. The minor historic surface workings are honoured in the survey.

14.2.6 Mineral Resource Classification

It is Cube's conclusion that the Kileba mineralisation is sufficiently drilled to allow classification in accordance with the CIM guidelines (CIM 2005). As with any non-rigidly defined classification there will always be some blocks within categories that depart from defined criteria. It is Cube's view that the final outcome must reflect a practical combination of geological knowledge, operational experience and estimation quality parameters that may be more numerical in nature. This approach to classification aims to avoid creating a complex numerically based 'mosaic'. Cube has considered all criteria and has classified the resource accordingly. The majority of the Southern domain is defined by 25m x 25m drill spacing and has been classified as Indicated Mineral Resources. No additional drilling has been completed with the Northern domains which are defined predominantly by 100m x 25m drill spacing and therefore remain as Inferred Mineral Resources.

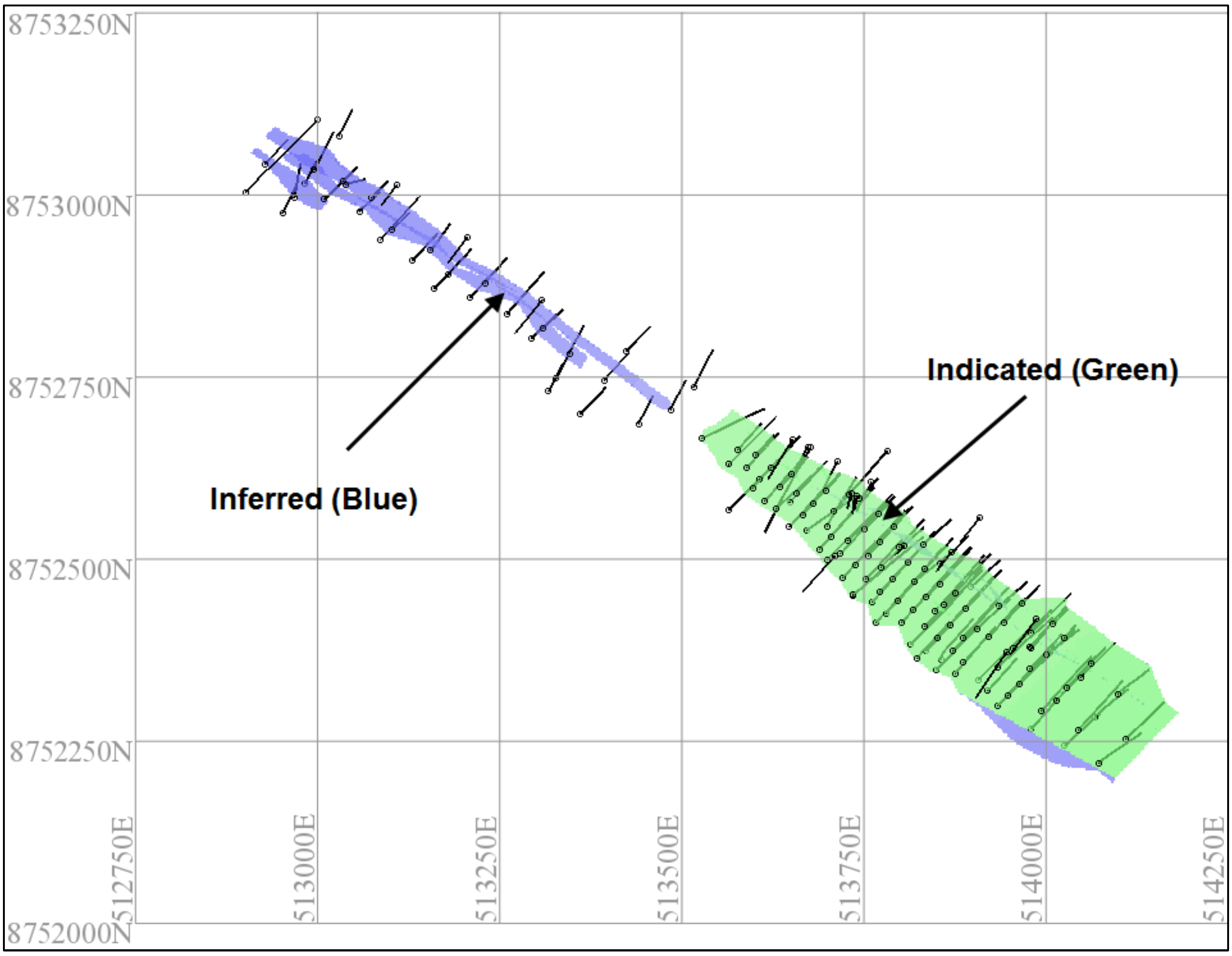

Figure 14-7 Kileba Resouce Classification – Plan

14.2.7 Grade Tonnage Curve

Grade tonnage curves for the Kileba Mineral Resources for combined oxide and transitional material is presented below in Figure 14-8 and sulphide in Figure 14-9.

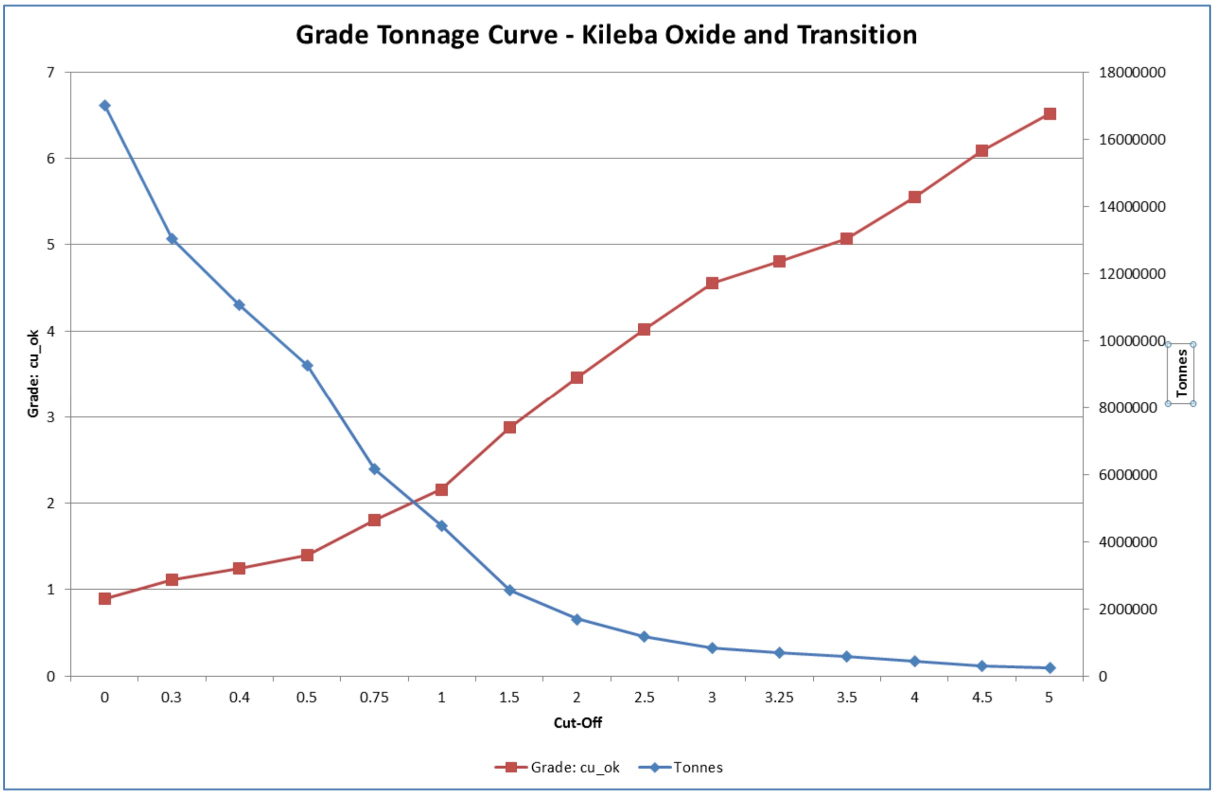

Figure 14-8 Grade Tonnage Curve – Kileba Oxide and Transitional

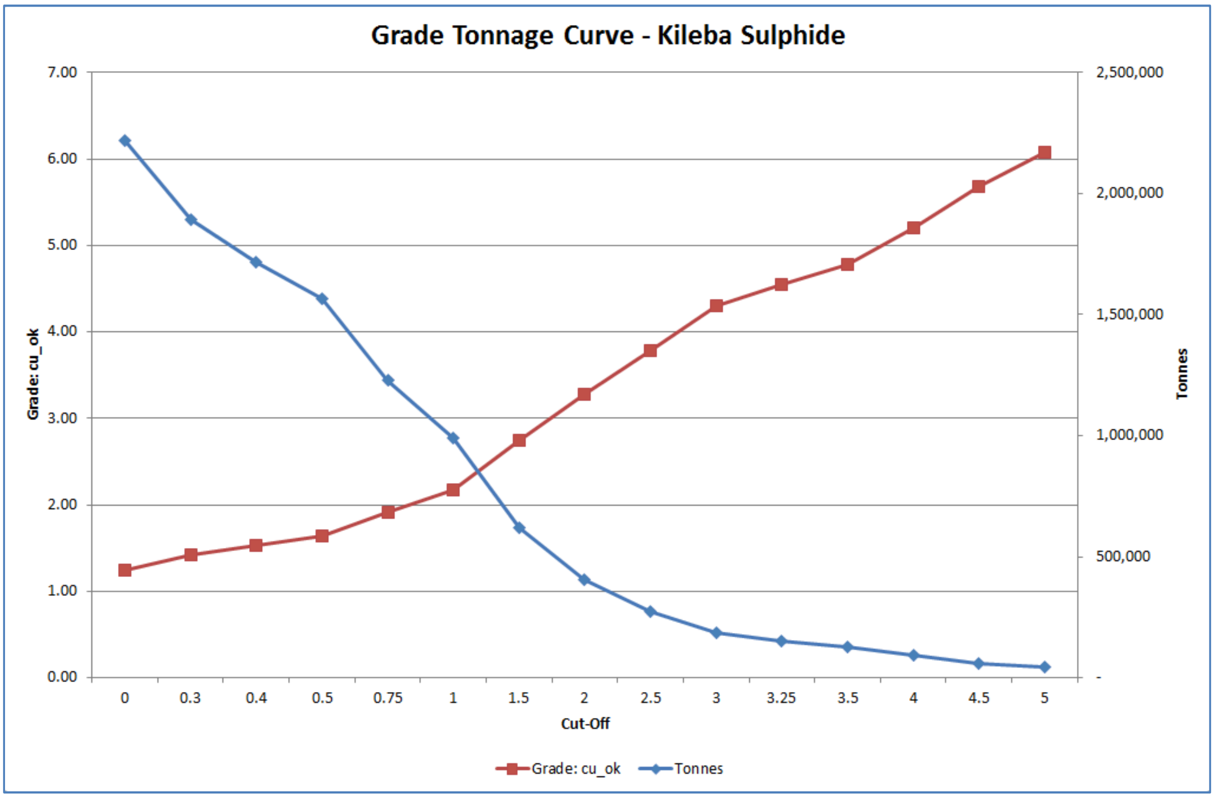

Figure 14-9 Grade Tonnage Curve – Kileba Sulphide

14.3 Kipoi North

The resource estimate for Kipoi North was completed during October and November 2012 by Cube and is an update of the resource estimate completed by Cube in February 2009. The objective of this work was to update the global copper (Cu) and cobalt (Co) estimates for public reporting and to produce a local recoverable model of Cu and Co for the Kipoi North project. Recent drilling at Kipoi North included 34 diamond drill holes for 3,436.5m which focused on infilling the existing mineralisation to a nominal 25m x 25m drill spacing and improve the confidence in the Mineral Resource interpretation and grade estimation.

14.3.1 Geological Interpretation and Domaining

The interpretation of lithological domains was based on work completed by Simon Dorling a consultant for CSA Global in collaboration with SEK site geologists and Cube. Sampling method, sample security and assay data quality assurance and control has been the responsibility of SEK with the results reviewed by Cube.

The mineralised Cu domain was interpreted using a combination of geological logging to define the key geological, weathering and mineralogical surfaces and a nominal lower cut-off grade of 0.15% Cu. This resulted in a single mineralised domain which honours the tightly folded stratigraphy at Kipoi North. The single mineralised domain was divided into 3 sub-domains to represent the northern and southern fold limbs and also the hinge area. The interpretation was an attempt to encompass the complete mineralised distribution and produce a model that reduces the risk of conditional bias often introduced where the constraining interpretation and data selection is based on a significantly higher grade than the natural geological grade cut-off.

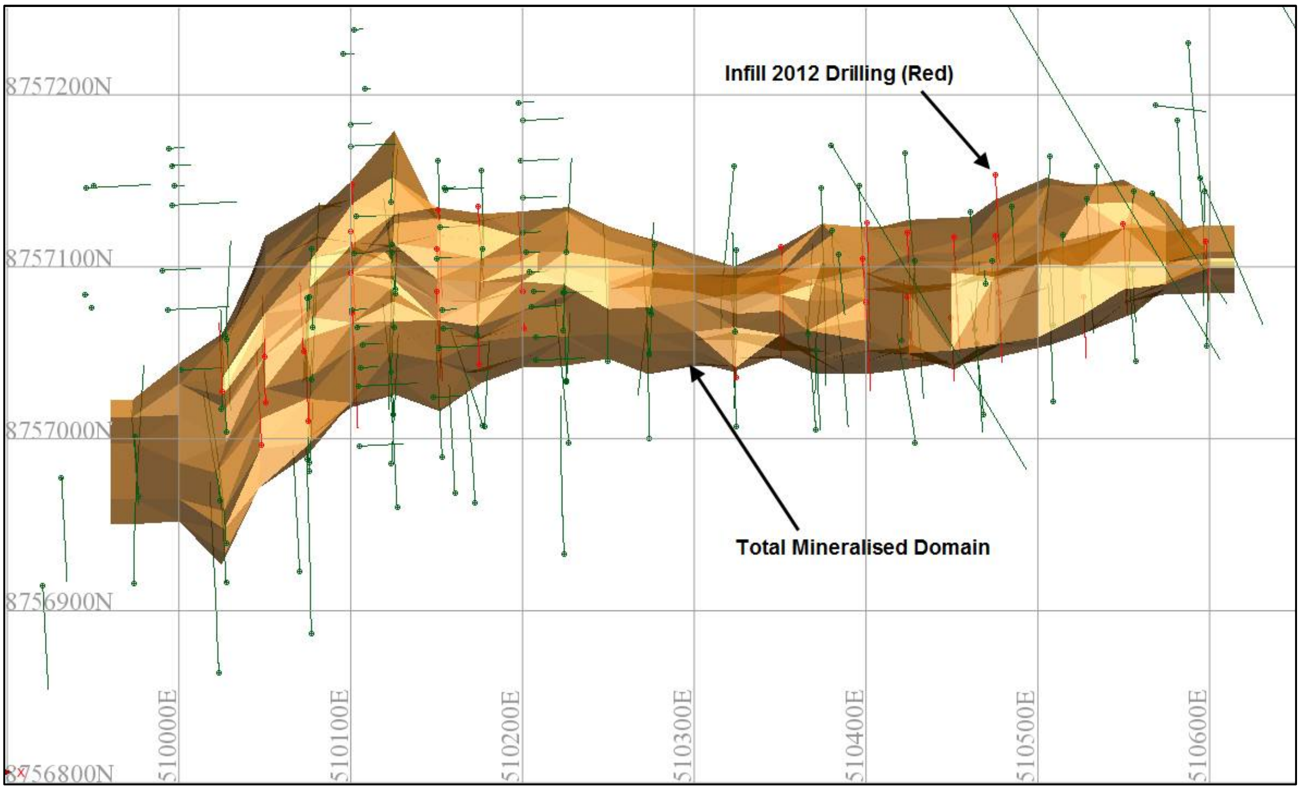

Figure 14-10 Kipoi North Copper Mineralisation – Plan View

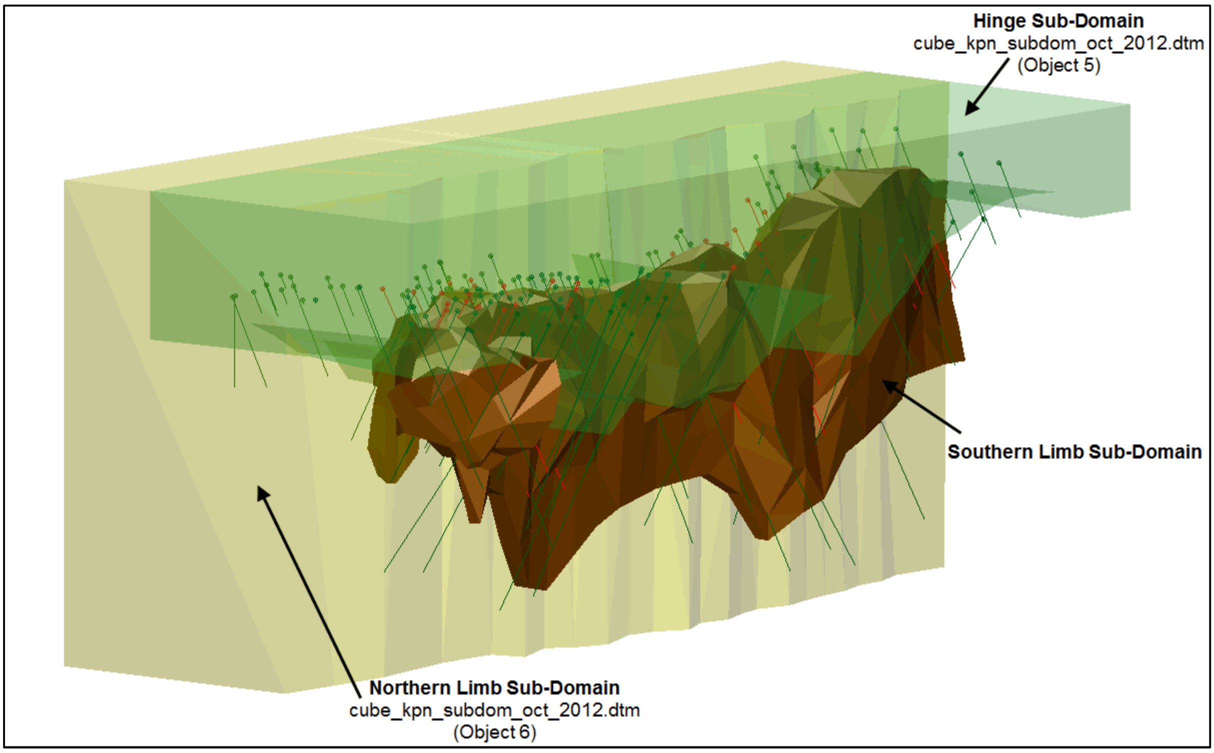

Figure 14-11 Kipoi North Copper Mineralisation Sub-Domaining – Looking North-West

14.3.2 Mineral Resource Estimation

Drilling intervals within the mineralised domain were flagged in the database table and 5m downhole composites extracted. No significant outlier composite grades for copper or cobalt within the mineralised domain were observed and therefore no high grade cuts were deemed necessary. Variography was used to analyse the spatial continuity within the mineralised domains and to determine appropriate estimation inputs to the interpolation process. Composite data for copper and cobalt were declustered and transformed to a Gaussian distribution prior to the calculation of variograms.

Copper and cobalt were estimated by Ordinary Block Kriging using 5m composites within 15mN x 25mE x 5mRL panels. A further process of Localised Uniform Conditioning (LUC) was applied to copper to produce a model suitable for reporting above grade cut-offs and for mine planning based on an SMU size of 5m x 5m x 2.5m and a selection of grade cut-offs. The LUC incorporated an Information Effect correction to allow for the effect of incomplete information on the local recoverable model.

Based on the QKNA and visual analysis of the samples selected under OK, appropriate search parameters were chosen as detailed below in Table 14.14.

Estimation Sub-Domain	Attribute	Sub-Domain Composites Used	Min Comp	Max Comp	Range (m)	Isatis Rotation (Geologist Convention)	Maj/Semi Maj	Maj/Min
1	Cu	1, 2 &3	4	20	140	75°/0°/0°	2	4
2	Cu	1 & 2	4	20	140	75°/0°/0°	2	4
3	Cu	1 & 3	4	20	140	75°/0°/0°	2	4
1	Co	1, 2 &3	4	20	100	75°/0°/0°	2	4
2	Co	1 & 2	4	20	100	75°/0°/0°	2	4
3	Co	1 & 3	4	20	100	75°/0°/0°	2	4

Table 14.14 OK Search Ellipsoid Parameters – Copper and Cobalt

14.3.3 Weathering

The weathering characteristics for all drilling at Kipoi North was geologically logged and recorded in the database. In addition, sulphur (%) is recorded as part of the assay suite. Both of these data have been used in the development of the Base of Oxidation (BOCO) and Top of Fresh (TOF) geological domains in a similar approach to that process used at Kipoi Central and Kileba.

14.3.4 Density

Bulk density values for Kipoi North were assigned on the basis of rock type and oxidation state. These values were determined by grouping the diamond core bulk density data according to lithology and oxidation state and calculating the mean for each sample population. The final assigned values were determined by modifying the mean of the density sample data to honour all available information including knowledge gained from in pit measurements during mining at nearby Kipoi Central.

The density values assigned for Kipoi North are summarised in Table 14.15**.**

Oxidation (wx_code)	Lithology (geol_code)	Assigned Density (t/m3)
Oxide (3) Upper Sub-Domain	grat_bh	1.90
	rsc	1.90
	dstrat_rsf	1.90
	slt	1.80
Oxide (3) Lower Sub-Domain	grat_bh	2.25
	rsc	2.15
	dstrat_rsf	2.15
	slt	2.00
Transitional (2)	grat_bh	2.50
	rsc	2.55
	dstrat_rsf	2.55
	slt	2.55
Fresh (1)	grat_bh	2.60
	rsc	2.65
	dstrat_rsf	2.65
	slt	2.65

Table 14.15 Kipoi North Model Specific Gravity

14.3.5 Model Depletion

No mining has been undertaken at Kipoi North and the final block model has been flagged to reflect the topographical survey DTM as at September 2012.

14.3.6 Mineral Resource Classification

It is Cube's conclusion that the Kipoi North mineralisation is sufficiently drilled to allow classification in accordance with the CIM guidelines (CIM 2005). As with any non-rigidly defined classification there will always be some blocks within categories that depart from defined criteria. It is Cube's view that the final outcome must reflect a practical combination of geological knowledge, operational experience and estimation quality parameters that may be more numerical in nature. This approach to classification aims to avoid creating a complex numerically based 'mosaic'. Cube has considered all criteria and has classified the Mineral Resource accordingly. The majority of the mineralised domain is defined by 25m x 25m drill spacing and has been classified as Indicated Mineral Resources. Areas where the drilling exceeds 25m x 25m have been classified as Inferred Mineral Resource.

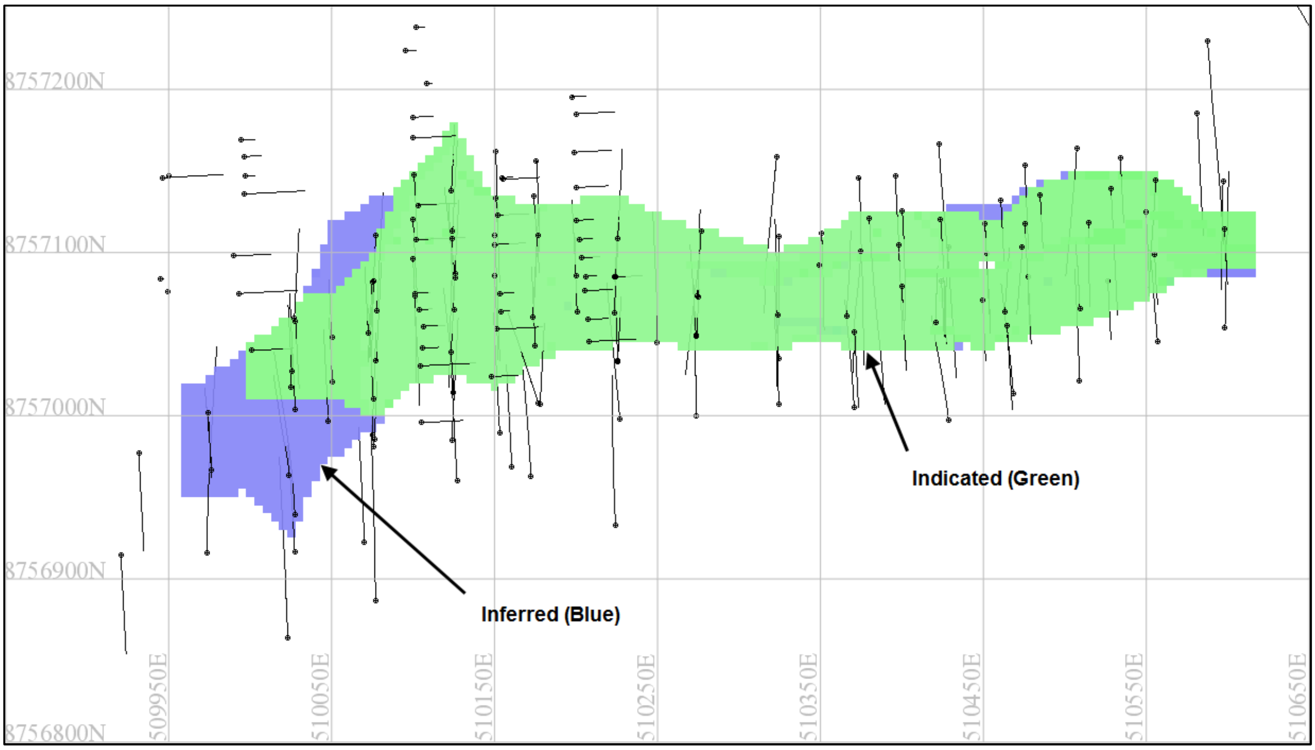

Figure 14-12 Kipoi North Resouce Classification – Plan

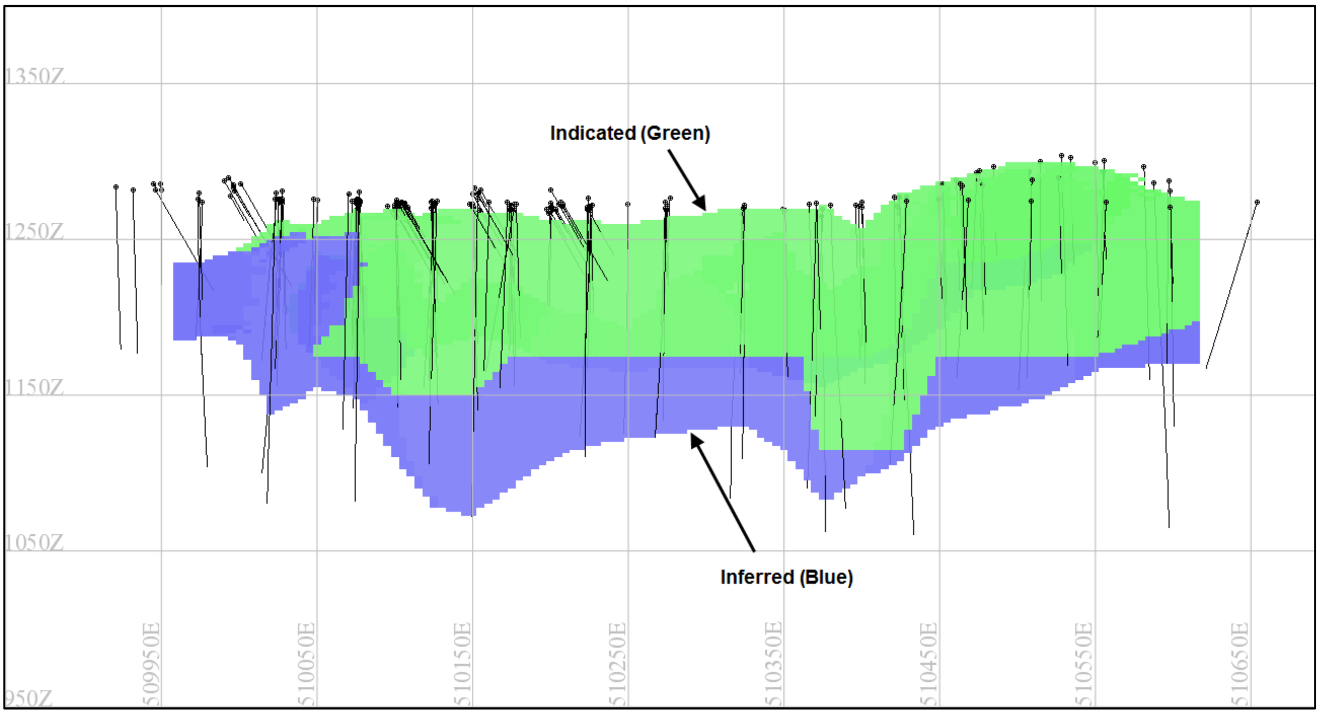

Figure 14-13 Kipoi North Resouce Classification – Longsection

14.3.7 Grade Tonnage Curve

Grade tonnage curves for the Kipoi North Mineral Resources for combined oxide and transitional material is presented below in Figure 14-4 and sulphide in Figure 14-5.

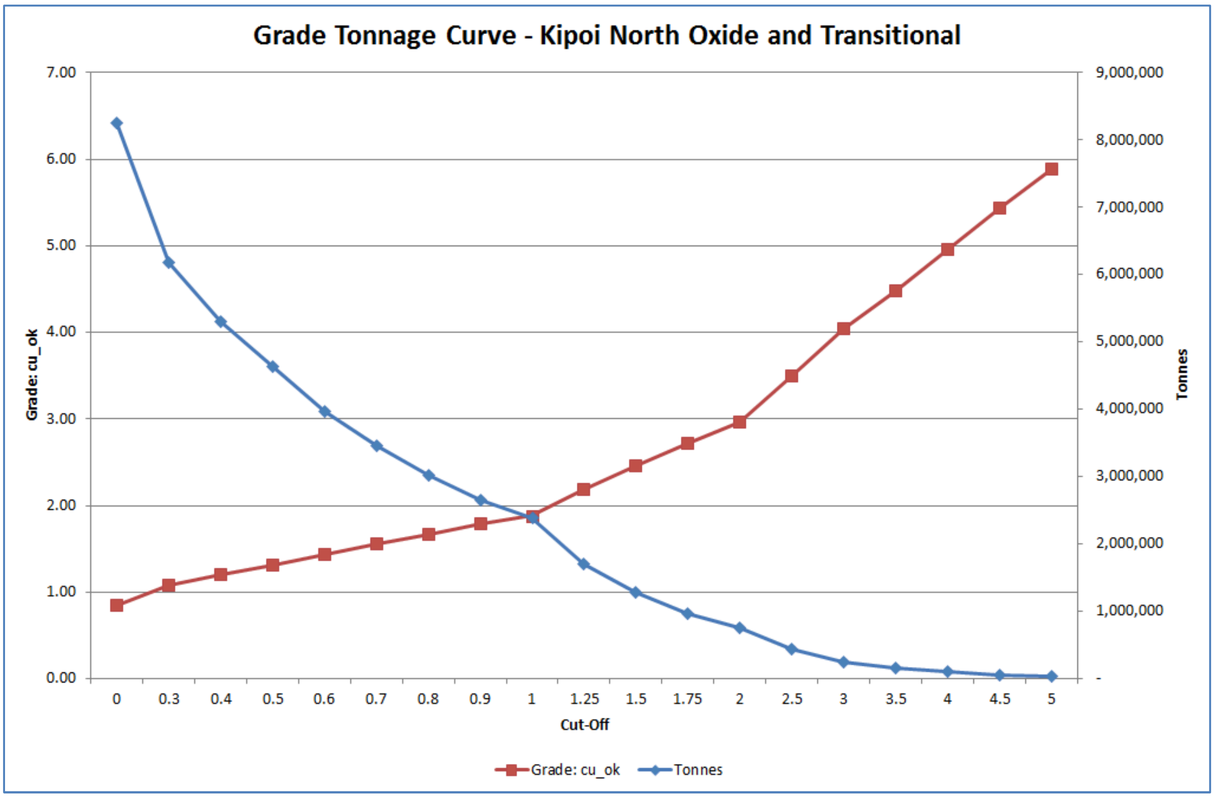

Figure 14-14 Grade Tonnage Curve – Kipoi North Oxide and Transitional

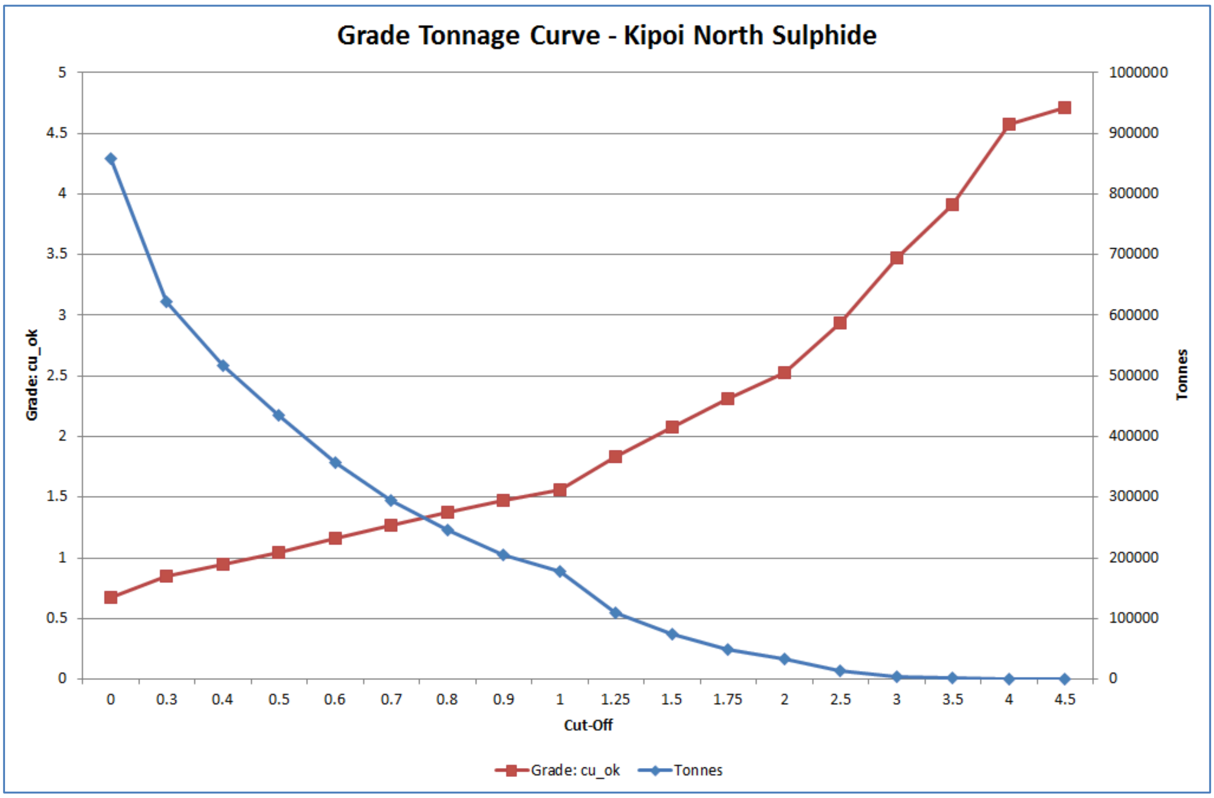

Figure 14-15 Grade Tonnage Curve – Kipoi North Sulphide

14.4 Discussion

Cube are not aware of any factors associated with environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the Mineral Resource Estimates at the Kipoi Copper Project.

15.0 MINERAL RESERVE ESTIMATES

The Mineral Reserves Estimate for the Stage 2 of the Kipoi Project was derived as the result of a Definitive Feasibility Study, based on the Measured and Indicated portions of the Kipoi Central, Kipoi North and Kileba resource models discussed in this report as well as all the relevant modifying factors and assumtions discussed in this section.

The process followed included industry standard open pit optimisation evaluations to guide the size and extent of the open pits, detailed open pit designs based on practical mining considerations and geotechnical recommendations for wall designs, mine production schedules to deliver material to the process facility within practical mining limits based on the mining method and equipment. Details of these processes are discussed in this section and in Section 16.0.

15.1 SCOPE OF WORK

The scope of Cube's work was to carry out mine engineering evaluation work towards a Definitive Feasibility Study on the Kipoi Central Stage 2 Copper Project DFS. A summary of activities which this involved is listed below.

- review of modifying factors pertinent to this portion of the study;
- apply such modifying factors as are appropriate in evaluating the open pit project;
- attend a site visit to review physical conditions, available core from exploration drilling and to interact with technical personnel involved in the project;
- carry out open pit optimisations throughout the study's progression;
- complete detailed final pit and staged designs in line with geotechnical parameters;
- design conceptual waste dumps and access roads; and
- develop a production schedule to satisfy the ore feed requirements of the processing facility.

15.2 OPEN PIT OPTIMISATION

Optimisation studies were carried out throughout the study's progress as key parameters were revised. This served the primary purpose of providing insight into the impacts of changing parameters and ultimately assist in the decision making process which would guide the direction of the work within the study.

Examples of parameters which influenced the various open pit optimisation studies include:

- Resource model re-estimation and updates
- Iterations including inferred and fresh/sulphide material

Preliminary optimisations which were carried out prior to the finalisation of all parameters, served to provide insight into the extent of the project and were also used as the basis of preliminary mine schedules which in turn provided valuable feedback on the project dynamics as part of the essential, iterative nature of mining studies.

Optimisations which were carried out including the Inferred resources and fresh/sulphide material provided a further insight into the extent to which this additional material may influence future pit development and whether such future inclusions would be compromised by the current study designs and schedule. As such these optimisation runs do not form an actual part of this study's outputs but were rather used as supplementary information in the formulation of the mine plan.

The data preparation for open pit optimisation work was undertaken in Surpac software and the optimisation was undertaken using Whittle software.

15.3 Open Pit Optimisation Parameters

Optimisation parameters were obtained from various sources within the study team. This section confirms the actual parameters used in the final optimisation runs.

15.3.1 Processing Cost, Recoveries and Revenue

Processing costs and recoveries used in the optimisations are as shown in Table 15.1 below.

Deposit	Material	Recovery (% Cu)	Process Opex+ G&A ($/t processed)
Kipoi Central	Pit 1 C1 (Oxide)	90.6	21.43
	Pit 2 C2 (Oxide)	89.9	17.51
	C3 (Transition)	86.7	33.78
	Fresh/Sulphide*	60.0	33.78
Kipoi North	C1 (Domain 1, Oxide)	70.6	42.57
	C2 (Domain 2&4, Oxide)	88.5	36.28
	Transition	83.0	55.67
Kileba	C1 (Domain 1, Oxide)	83.9	41.19
	C2 (Domain 2, Oxide)	84.2	27.07
	Transition	83.0	55.67

* Fresh/Sulphide material not included in Feasibility Study

Table 15.1 Processing Cost and Recoveries

Table 15.2 describes which geological domains equate to the metallurgical materials in the above table.

	Domain	
Deposit	**Metallurgical**	**Geological**
Kipoi Central	C1	Stage 1 Pit
	C2	Stage 2 Pit
Kipoi North	C1	rsc
	C2	Remainder
Kileba	C1	nw_slt
	C1	se_bx
	C1	se_slt
	C2	ne_slt
	C2	nw_carb
	C2	se_carb
	C2	se_til

	C2	sw_slt
	C2	und_slt

Table 15.2 Metallurgical / Geological Domain

A revenue of $2.62 / lb Cu was used throughout the optimisation study. A nominal 10% discount rate was used in the analyses for discounted shell values. The processing costs expressed in Table 15.1 account for cost of royalties and no other royalty was applied to the revenue.

15.3.2 Mining Costs

The mining costs used in the study were based on mining contractor fixed schedule of rates tendered in for the current Kipoi Project, supplied by the mining contractor, MCK, and is made up of load and haul, drill and blast and management fee costs. Cube Consulting determined an additional fuel cost as being required as part of the total mining costs to cover the difference between a fixed fuel supply rate and the actual market price of fuel. These were summed up as indicated in Table 15.3 and Table 15.4 to determine the overall mining costs.

	ORE COSTS						
	RL		Load & Haul Cost ($/bcm)	Drill & Blast Costs ($/bcm)	Fuel Adjustment Cost ($/bcm)	M'gmt Fee ($/bcm)	Total Ore Mining Costs ($/bcm)
Depth	**From**	**To**					
5	1390	1385	$0.00	$0.00	$0.00	$0.00	**$8.15**
10	1385	1360	$0.00	$0.00	$0.00	$0.00	**$8.15**
15	1380	1355	$0.00	$0.00	$0.00	$0.00	**$8.15**
20	1375	1350	$0.00	$0.00	$0.00	$0.00	**$8.15**
25	1370	1345	$0.00	$0.00	$0.00	$0.00	**$8.15**
30	1365	1340	$0.00	$0.00	$0.00	$0.00	**$8.15**
35	1360	1335	$0.00	$0.00	$0.00	$0.00	**$8.15**
40	1355	1350	$0.00	$0.00	$0.00	$0.00	**$8.15**
45	1350	1345	$0.00	$0.00	$0.00	$0.00	**$8.15**
50	1345	1340	$0.00	$0.00	$0.00	$0.00	**$8.15**
55	1340	1335	$4.03	$2.08	$1.17	$0.87	**$8.15**
60	1335	1330	$4.03	$2.08	$1.17	$0.87	**$8.15**
65	1330	1325	$4.03	$2.08	$1.17	$0.87	**$8.15**
70	1325	1320	$4.03	$2.08	$1.17	$0.87	**$8.15**
75	1320	1315	$4.03	$2.08	$1.17	$0.87	**$8.15**
80	1315	1310	$4.03	$2.08	$1.17	$0.87	**$8.15**
85	1310	1305	$4.03	$2.08	$1.17	$0.87	**$8.15**
90	1305	1300	$4.03	$2.08	$1.17	$0.87	**$8.15**
95	1300	1295	$4.08	$2.08	$1.17	$0.87	**$8.20**
100	1295	1290	$4.08	$2.08	$1.17	$0.87	**$8.20**
105	1290	1285	$4.16	$2.08	$1.17	$0.87	**$8.28**
110	1285	1280	$4.16	$2.08	$1.17	$0.87	**$8.28**
115	1280	1275	$4.25	$2.08	$1.17	$0.87	**$8.37**
120	1275	1270	$4.25	$2.08	$1.17	$0.87	**$8.37**
125	1270	1265	$4.32	$2.08	$1.17	$0.87	**$8.44**
130	1265	1260	$4.32	$2.08	$1.17	$0.87	**$8.44**
135	1260	1255	$4.40	$2.08	$1.17	$0.87	**$8.52**
140	1255	1250	$4.40	$2.08	$1.17	$0.87	**$8.52**
145	1250	1245	$4.49	$2.08	$1.17	$0.87	**$8.61**
150	1245	1240	$4.49	$2.08	$1.17	$0.87	**$8.61**
155	1240	1235	$4.53	$2.08	$1.17	$0.87	**$8.65**
160	1235	1230	$4.53	$2.08	$1.17	$0.87	**$8.65**

Table 15.3 Ore mining Costs

WASTE COSTS						
RL		Load & Haul Cost ($/bcm)	Drill & Blast Costs ($/bcm)	Fuel Adjustment Cost ($/bcm)	M'gmt Fee ($/bcm)	Total Waste Mining Costs ($/bcm)
From	To					
1390	1385	$4.06	$1.71	$1.17	$0.87	**$7.81**
1385	1360	$4.06	$1.71	$1.17	$0.87	**$7.81**
1380	1355	$4.06	$1.71	$1.17	$0.87	**$7.81**
1375	1350	$4.06	$1.71	$1.17	$0.87	**$7.81**
1370	1345	$3.90	$1.71	$1.17	$0.87	**$7.65**
1365	1340	$3.90	$1.71	$1.17	$0.87	**$7.65**
1360	1335	$3.90	$1.71	$1.17	$0.87	**$7.65**
1355	1350	$3.90	$1.71	$1.17	$0.87	**$7.65**
1350	1345	$3.92	$1.71	$1.17	$0.87	**$7.67**
1345	1340	$3.92	$1.71	$1.17	$0.87	**$7.67**
1340	1335	$3.92	$1.71	$1.17	$0.87	**$7.67**
1335	1330	$3.92	$1.71	$1.17	$0.87	**$7.67**
1330	1325	$3.94	$1.71	$1.17	$0.87	**$7.69**
1325	1320	$3.94	$1.71	$1.17	$0.87	**$7.69**
1320	1315	$3.94	$1.71	$1.17	$0.87	**$7.69**
1315	1310	$3.94	$1.71	$1.17	$0.87	**$7.69**
1310	1305	$3.97	$1.71	$1.17	$0.87	**$7.72**
1305	1300	$3.97	$1.71	$1.17	$0.87	**$7.72**
1300	1295	$4.06	$1.71	$1.17	$0.87	**$7.81**
1295	1290	$4.06	$1.71	$1.17	$0.87	**$7.81**
1290	1285	$4.23	$1.71	$1.17	$0.87	**$7.98**
1285	1280	$4.23	$1.71	$1.17	$0.87	**$7.98**
1280	1275	$4.31	$1.71	$1.17	$0.87	**$8.06**
1275	1270	$4.31	$1.71	$1.17	$0.87	**$8.06**
1270	1265	$4.34	$1.71	$1.17	$0.87	**$8.09**
1265	1260	$4.34	$1.71	$1.17	$0.87	**$8.09**
1260	1255	$4.43	$1.71	$1.17	$0.87	**$8.18**
1255	1250	$4.43	$1.71	$1.17	$0.87	**$8.18**
1250	1245	$4.51	$1.71	$1.17	$0.87	**$8.26**
1245	1240	$4.51	$1.71	$1.17	$0.87	**$8.26**
1240	1235	$4.55	$1.71	$1.17	$0.87	**$8.30**
1235	1230	$4.55	$1.71	$1.17	$0.87	**$8.30**

Table 15.4 Waste mining Costs

15.3.2.1 Load and Haul Costs

The load and haul rates were supplied by MCK and as indicated in Table 15.3 and Table 15.4, were provided on 5m bench interval, by pit stage (Pit 1a and Pit 1b), and by material type (ore, low grade and waste). For the purposes of the Kipoi Central Phase II study, it was assumed that the load and haul rates for Pit 1b will be the most applicable due to the potential increase in pit size a depth and the consistency in the cost increase with increasing depth. Where the bench rates did not cover areas in the model, an extrapolation of the rates was used derived from an equation of a generated trend line resulting from the charting of the individual bench by bench costs. Figure 15-1 and Figure 15-2 show the ore and waste bench costs with depth respectively and the resultant equations of the line.

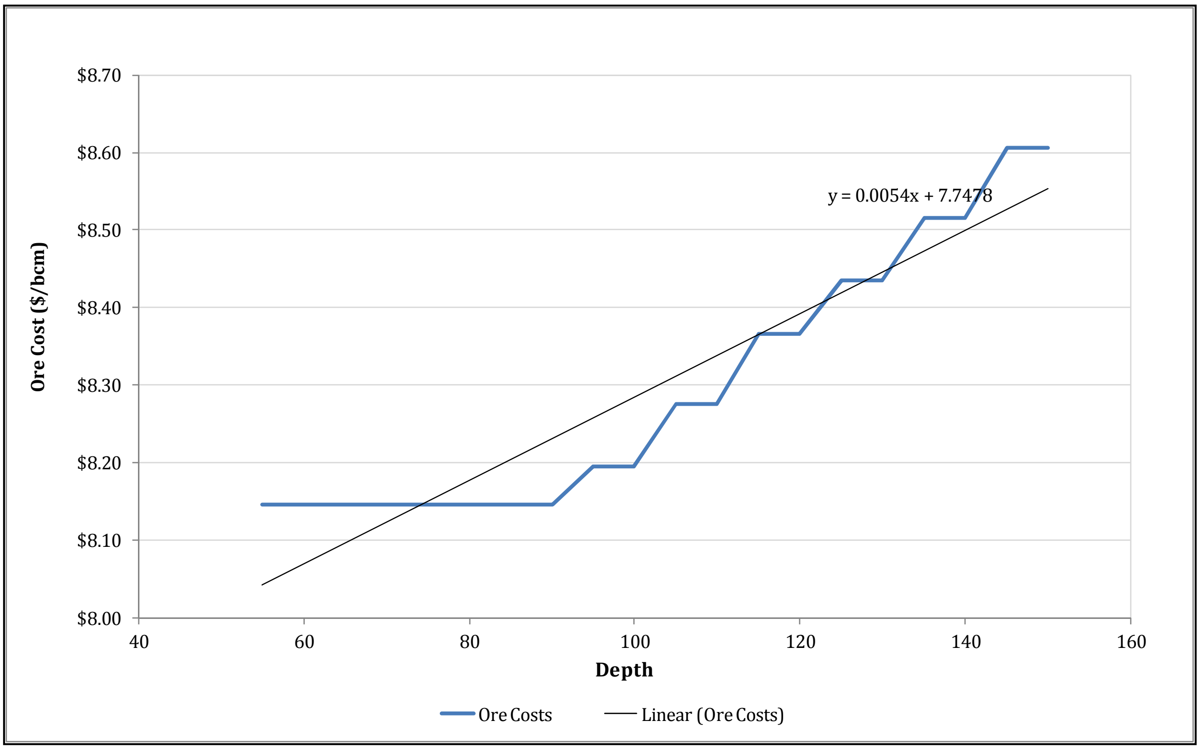

Figure 15-1 Ore Cost by Depth

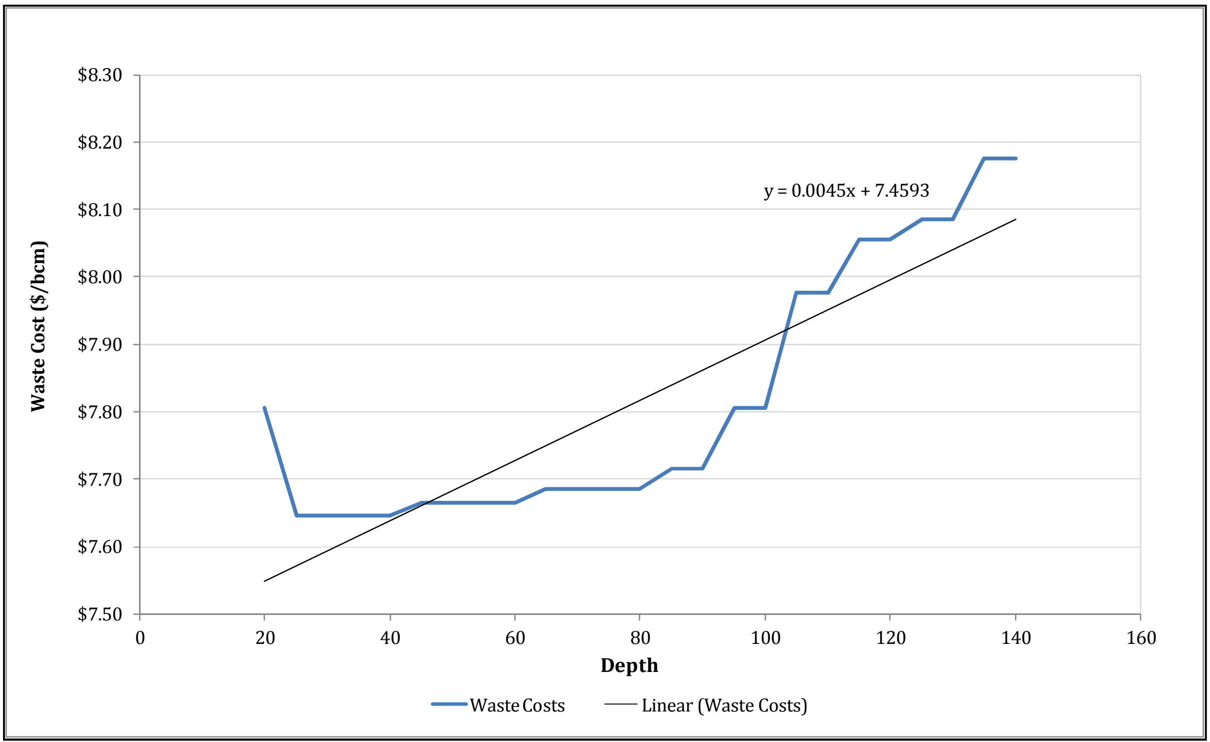

Figure 15-2 Waste Cost by Depth

15.3.2.2 Drill and Blast Costs

Drill and blast costs as provided in the mining contract are based on drilling using a 102mm diameter bit, on a 5m bench height, for a range of burden and spacing iterations to yield powder factors (pf) ranging from 0.15-0.40kg/m3 in oxide/transition formation. In Cube's estimation and based on observation of current mining practices at the Kipoi project, a pf of 0.40kg/m3 in ore will be adequate in achieving desirable fragmentation for digging and crushing efficiencies. Hence a, drilling pattern (burden x spacing x depth) of 3.5m x 4m x 5m, was selected as the ore pattern for drilling and blasting, at a unit rate of $2.08/bcm.

For the waste a 4m x 4.5m x 5m pattern with a relatively lower powder factor, but still suitable for good fragmentation at a unit rate of $1.71/bcm was selected. All drill and blast unit costs include explosives costs.

15.3.2.3 Fuel Adjustment Cost

The MCK/SEK mining contract allows for fuel to be provided by SEK to the mining contractor at a fixed price. Per the contract, this was fixed at $0.85/l. However, since SEK purchases fuel based on the market price, an adjustment/allowance had to be made to account for the difference between the actual market price and the fixed price, to represent the actual fuel cost to SEK. This cost was converted to a $/bcm cost and added on a bench by bench basis to the other mining costs for optimisation purposes.

As at March 2012, SEK was being supplied fuel at a market price of $1.78/l. Average fuel consumption per bcm mined was estimated at 1.50l/bcm, and the product of the additional cost and fuel consumption resulted in a $1.17/bcm, being the fuel adjustment cost to be added to the mining costs for optimisation purposes.

15.3.2.4 Management Fee

The contract also provided for a fixed management fee of $7,270,242 over the contract term to be paid to MCK. This fixed was converted into a unit cost ($/bcm) by diving the total sum over the estimated volume to be mined over the contract (8,397,835m3) to give a management fee cost of $0.87/bcm. This was added to operating cost items to derive the overall mining cost.

15.3.3 Pit Wall Slopes

Wall slope angles for optimisation purposes were arrived at by considering the recommended slope design configurations as detailed in a letter report from George, Orr and Associates, dated 9th October 2012 and in conjunction with previous pit designs completed as part of the iterative planning process. The availability of the latter was useful to provide an insight into likely ramp configurations to achieve access to the pit bottom and as such a more informed pit wall angle could be used as an input into the pit optimisation. The overall wall angles which resulted from this process and subsequently used in the pit optimisations are as follows:

Kipopi Central	30°
Kileba	33°
Kipoi North	30°

The appropriateness of these angles were later confirmed in the design process where favourable reconciliations were achieved between pit designs and optimisation shells.

15.4 OPTIMISATION RESULTS

The results from the optimisation runs are summarised below in Table 15.5 to Table 15.9 and Figure 15-3 to Figure 15-6. Analyses of the individual deposit results were undertaken by taking into account total pit size, ore tonnes, incremental value per ounce produced, shell value based on undiscounted cash flow shell and value based on two methods of discounted the cash flows.

The two methods of estimating the discounted cash flows are the so-called 'best' and 'worst' cases whereby the best case is the theoretical maximum discounted value based on an assumed incremental schedule which depletes the shells from smallest to largest , thereby deferring higher cost ounces to later in the schedule.

The worst case analysis is based on a mining schedule which depletes the shells on a top-down, or bench-by-bench basis thereby simulating no staging in pit development. It is notable that of the two methods the worst case schedule is usually closer aligned to a practical schedule based on a designed staged development.

Shell numbers shown in the tables and graphs below which correspond to the shells selected on which pit designs were based, are as follows:

Kipoi Central Stage 2a	Shell 8
Kipoi Central Stage 2b	Shell 17
Kipoi Central Satellite	Shell 17
Kileba Final	Shell 19
Kipoi North Final	Shell 17

The above shell selections were undertaken in consultation with SEK management and as such is a reflection of the strategic thinking of the Company with mostly revenue factor 1 shells being selected, with the exception of the Kileba deposit where the revenue factor 1.1 shell was selected reflecting the confidence in conversion of further resources into economical material within that pit.

Kipoi Central
Run A DFS Optimisation Cu $2.62/lb Excluding Inferred Excluding Primary

Shell	Revenue	Base	Total	Waste	Strip	Ore	Feed Grades		Recovered	Mining	Milling		Undiscounted	Discounted	Discounted
	Factor	RL	Tonnes	Tonnes	Ratio	Tonnes	Cu %	Co %	Cu t	Cost	Process Cost	Revenue	Cash Flow	Best	Worst
1	0.20	1225	30,719	23,789	3.4	6,930	3.94	0.18	244	120,414	140,315	1,406,463	1,145,733	1,145,565	1,145,565
2	0.25	1225	34,832	25,073	2.6	9,759	3.36	0.14	293	137,083	192,925	1,691,060	1,361,052	1,360,771	1,360,771
3	0.30	1225	67,074	38,330	1.3	28,744	2.25	0.09	576	259,458	609,097	3,325,498	2,456,943	2,455,448	2,455,448
4	0.35	1225	83,042	44,411	1.2	38,631	2.04	0.12	704	319,412	812,232	4,063,600	2,931,957	2,929,559	2,929,559
5	0.40	1225	8,916,728	7,023,600	3.7	1,893,128	1.75	0.04	29,635	34,123,608	35,565,021	171,174,282	101,485,653	97,496,932	97,496,932
6	0.45	1210	15,924,912	12,305,506	3.4	3,619,406	1.64	0.05	53,045	60,424,111	70,544,873	306,393,233	175,424,250	162,478,902	162,478,902
7	0.50	1200	22,301,771	16,814,185	3.1	5,487,586	1.51	0.05	74,038	84,400,065	109,394,510	427,645,045	233,850,470	211,529,579	210,870,224
8	0.55	1195	26,884,220	20,087,851	3.0	6,796,369	1.46	0.06	88,134	101,646,471	138,405,622	509,068,104	269,016,011	240,607,301	237,562,243
9	0.60	1190	34,898,411	26,220,382	3.0	8,678,029	1.40	0.05	107,922	131,457,097	178,154,459	623,361,205	313,749,650	274,731,629	266,716,128
10	0.65	1190	46,789,598	34,916,849	2.9	11,872,749	1.29	0.05	136,620	175,411,176	241,922,436	789,123,905	371,790,294	318,341,117	301,866,603
11	0.70	1185	49,919,763	37,243,942	2.9	12,675,821	1.27	0.05	143,810	186,923,065	259,098,855	830,655,990	384,634,070	327,196,422	307,476,347
12	0.75	1180	52,559,220	39,255,248	3.0	13,303,972	1.26	0.06	149,207	196,770,178	272,521,284	861,825,672	392,534,210	332,283,889	309,614,598
13	0.80	1180	56,588,403	42,365,195	3.0	14,223,208	1.24	0.06	156,904	212,098,719	292,086,479	906,285,845	402,100,647	339,007,549	312,890,478
14	0.85	1180	57,671,947	43,179,419	3.0	14,492,528	1.23	0.06	159,000	216,124,513	298,117,905	918,393,645	404,151,227	340,453,830	313,315,510
15	0.90	1180	60,673,934	45,693,336	3.1	14,980,598	1.23	0.06	163,505	227,209,941	309,755,223	944,413,446	407,448,283	342,726,963	313,342,205
16	0.95	1180	61,843,047	46,653,039	3.1	15,190,008	1.22	0.06	165,182	231,668,087	314,321,152	954,101,944	408,112,705	343,143,667	312,666,130
17	1.00	1175	64,404,850	48,825,916	3.1	15,578,934	1.22	0.06	168,415	241,353,641	322,878,241	972,776,066	408,544,183	343,330,091	310,524,541
18	1.05	1175	65,862,845	50,099,154	3.2	15,763,691	1.21	0.06	169,992	246,900,227	326,813,197	981,884,888	408,171,465	343,003,511	308,945,171
19	1.10	1170	67,824,847	51,840,861	3.2	15,983,986	1.21	0.06	172,011	254,032,770	332,420,409	993,542,144	407,088,965	342,162,307	306,677,418
20	1.15	1170	69,264,943	53,146,963	3.3	16,117,980	1.21	0.06	173,315	259,469,593	335,415,491	1,001,078,799	406,193,716	341,485,992	304,921,288
21	1.20	1170	70,659,616	54,398,348	3.4	16,261,268	1.21	0.06	174,612	264,442,284	339,295,697	1,008,566,618	404,828,636	340,477,947	302,920,367
22	1.25	1170	71,245,452	54,930,530	3.4	16,314,922	1.21	0.06	175,093	266,581,524	340,637,662	1,011,346,060	404,126,874	339,967,108	301,978,436
23	1.30	1170	72,300,523	55,907,557	3.4	16,392,966	1.21	0.06	175,886	270,387,063	342,819,261	1,015,924,720	402,718,397	338,952,116	300,266,914
24	1.35	1170	73,400,031	56,912,125	3.5	16,487,906	1.21	0.06	176,719	274,527,055	345,212,931	1,020,739,456	400,999,469	337,717,965	298,183,811
25	1.40	1165	74,753,285	58,159,947	3.5	16,593,338	1.20	0.06	177,655	279,552,331	347,799,252	1,026,146,235	398,794,652	336,144,949	295,595,453
26	1.45	1165	75,350,571	58,716,542	3.5	16,634,029	1.20	0.06	178,032	281,685,281	348,956,497	1,028,321,243	397,679,465	335,353,932	294,398,733
27	1.50	1165	75,602,737	58,952,185	3.5	16,650,552	1.20	0.06	178,181	282,650,391	349,327,014	1,029,179,850	397,202,445	335,016,121	293,862,801
28	1.55	1165	75,794,174	59,129,553	3.6	16,664,621	1.20	0.06	178,296	283,350,158	349,727,367	1,029,847,681	396,770,157	334,710,318	293,423,553
29	1.60	1165	76,694,274	59,969,835	3.6	16,724,439	1.20	0.06	178,796	286,648,359	351,238,293	1,032,735,034	394,848,382	333,353,347	291,470,442
30	1.65	1165	77,069,930	60,325,298	3.6	16,744,632	1.20	0.06	178,992	287,977,767	351,851,366	1,033,869,466	394,040,333	332,784,302	290,675,867
31	1.70	1165	78,089,394	61,285,551	3.7	16,803,843	1.20	0.06	179,522	291,861,385	353,395,113	1,036,930,799	391,674,301	331,120,877	288,237,923
32	1.75	1165	79,282,034	62,426,280	3.7	16,855,754	1.20	0.06	180,046	296,105,464	354,894,444	1,039,956,945	388,957,037	329,216,052	285,596,594
33	1.80	1165	79,427,006	62,563,783	3.7	16,863,223	1.20	0.06	180,109	296,654,000	355,031,481	1,040,320,258	388,634,777	328,990,396	285,258,386
34	1.85	1165	79,802,397	62,926,040	3.7	16,876,357	1.20	0.06	180,260	297,943,872	355,412,863	1,041,190,014	387,833,279	328,429,517	284,572,345
35	1.90	1165	79,970,205	63,088,544	3.7	16,881,661	1.20	0.06	180,323	298,542,373	355,592,670	1,041,555,400	387,420,357	328,140,683	284,207,707
36	1.95	1165	80,940,030	64,018,135	3.8	16,921,895	1.20	0.06	180,729	302,290,798	356,630,619	1,043,900,077	384,978,659	326,434,378	281,745,768
37	2.00	1165	81,134,942	64,204,875	3.8	16,930,067	1.20	0.06	180,801	303,017,138	356,889,455	1,044,317,680	384,411,088	326,038,114	281,216,380

Table 15.5 Kipoi Central Optimisation Results Summary

Kipoi Central
Run A DFS Optimisation Cu $2.62/lb Excluding Inferred Excluding Primary
Material Breakdown

Oxide												Transitional												Primary											
Measured				Indicated				Inferred				Measured				Indicated				Inferred				Measured				Indicated				Inferred			
Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered	Ore	Feed Grades		Recovered
Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t
2,394	1.57	0.04	34	3,437	4.93	0.27	152	0	0.00	0.00	0	0	0.00	0.00	0	1,099	6.03	0.20	57	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
4,140	1.79	0.03	67	4,357	4.24	0.23	166	0	0.00	0.00	0	163	1.82	0.02	3	1,099	6.03	0.20	57	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
12,854	1.59	0.03	183	9,666	2.93	0.15	255	0	0.00	0.00	0	4,473	1.66	0.04	64	1,751	4.85	0.25	74	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
16,075	1.53	0.03	221	14,583	2.34	0.22	307	0	0.00	0.00	0	4,636	1.66	0.04	67	3,337	3.78	0.17	109	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
25,766	1.52	0.03	351	1,738,898	1.71	0.04	26,776	0	0.00	0.00	0	11,046	2.22	0.03	213	117,418	2.25	0.03	2,295	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
45,095	1.32	0.03	536	3,170,549	1.47	0.05	42,038	0	0.00	0.00	0	20,006	1.85	0.03	321	383,756	3.05	0.06	10,151	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
48,363	1.33	0.03	576	4,678,170	1.31	0.05	54,963	0	0.00	0.00	0	23,890	1.75	0.04	362	737,163	2.84	0.06	18,137	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
48,363	1.33	0.03	576	5,626,053	1.24	0.05	62,558	0	0.00	0.00	0	23,890	1.75	0.04	362	1,098,063	2.59	0.06	24,638	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
48,363	1.33	0.03	576	7,107,985	1.19	0.05	76,241	0	0.00	0.00	0	23,890	1.75	0.04	362	1,497,791	2.37	0.06	30,743	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
52,828	1.26	0.03	597	9,847,799	1.11	0.05	98,626	0	0.00	0.00	0	24,053	1.75	0.04	364	1,948,069	2.19	0.06	37,033	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
52,828	1.26	0.03	597	10,467,346	1.10	0.05	103,333	0	0.00	0.00	0	24,053	1.75	0.04	364	2,131,594	2.14	0.06	39,516	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
52,960	1.26	0.03	598	10,952,615	1.08	0.06	106,831	0	0.00	0.00	0	25,031	1.72	0.03	373	2,273,366	2.10	0.06	41,404	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
52,960	1.26	0.03	598	11,667,747	1.07	0.06	111,990	0	0.00	0.00	0	25,031	1.72	0.03	373	2,477,470	2.05	0.06	43,943	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
53,081	1.26	0.03	600	11,858,603	1.06	0.06	113,187	0	0.00	0.00	0	26,172	1.69	0.03	384	2,554,672	2.02	0.06	44,830	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
53,202	1.26	0.03	601	12,160,848	1.05	0.06	115,315	0	0.00	0.00	0	29,255	1.65	0.04	419	2,737,293	1.99	0.06	47,170	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	12,315,532	1.05	0.06	116,403	0	0.00	0.00	0	30,070	1.64	0.04	428	2,789,922	1.97	0.06	47,741	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	12,600,534	1.05	0.06	118,405	0	0.00	0.00	0	30,722	1.62	0.04	432	2,893,194	1.95	0.06	48,967	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	12,743,873	1.04	0.06	119,474	0	0.00	0.00	0	30,722	1.62	0.04	432	2,934,612	1.94	0.06	49,476	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	12,858,445	1.04	0.06	120,296	0	0.00	0.00	0	30,722	1.62	0.04	432	3,040,335	1.92	0.06	50,671	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	12,953,706	1.04	0.06	121,090	0	0.00	0.00	0	30,722	1.62	0.04	432	3,079,068	1.92	0.06	51,183	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	13,013,891	1.04	0.06	121,491	0	0.00	0.00	0	30,722	1.62	0.04	432	3,162,171	1.90	0.06	52,078	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,484	1.25	0.03	611	13,043,243	1.04	0.06	121,693	0	0.00	0.00	0	30,722	1.62	0.04	432	3,186,473	1.90	0.06	52,358	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,071,556	1.04	0.06	121,868	0	0.00	0.00	0	31,374	1.62	0.04	439	3,235,302	1.89	0.06	52,964	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,122,339	1.04	0.06	122,258	0	0.00	0.00	0	31,374	1.62	0.04	439	3,279,459	1.88	0.06	53,407	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,183,155	1.04	0.06	122,703	0	0.00	0.00	0	31,374	1.62	0.04	439	3,324,075	1.87	0.06	53,898	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,196,834	1.03	0.06	122,785	0	0.00	0.00	0	31,374	1.62	0.04	439	3,351,087	1.87	0.06	54,193	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,208,509	1.03	0.06	122,892	0	0.00	0.00	0	31,374	1.62	0.04	439	3,355,935	1.86	0.06	54,235	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,213,221	1.03	0.06	122,913	0	0.00	0.00	0	31,374	1.62	0.04	439	3,365,292	1.86	0.06	54,330	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,734	1.25	0.03	614	13,245,055	1.03	0.06	123,106	0	0.00	0.00	0	31,374	1.62	0.04	439	3,393,276	1.86	0.06	54,637	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
54,976	1.25	0.03	618	13,249,195	1.03	0.06	123,133	0	0.00	0.00	0	31,537	1.61	0.04	441	3,408,924	1.85	0.06	54,801	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,277,629	1.03	0.06	123,314	0	0.00	0.00	0	31,537	1.61	0.04	441	3,439,587	1.85	0.06	55,149	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,293,654	1.03	0.06	123,417	0	0.00	0.00	0	31,537	1.61	0.04	441	3,475,473	1.84	0.06	55,571	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,300,805	1.03	0.06	123,471	0	0.00	0.00	0	31,537	1.61	0.04	441	3,475,791	1.84	0.06	55,579	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,304,723	1.03	0.06	123,491	0	0.00	0.00	0	31,537	1.61	0.04	441	3,485,007	1.84	0.06	55,710	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,304,723	1.03	0.06	123,491	0	0.00	0.00	0	31,537	1.61	0.04	441	3,490,311	1.84	0.06	55,773	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,324,806	1.03	0.06	123,664	0	0.00	0.00	0	31,537	1.61	0.04	441	3,510,462	1.84	0.06	56,006	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
55,090	1.25	0.03	618	13,325,922	1.03	0.06	123,670	0	0.00	0.00	0	31,537	1.61	0.04	441	3,517,518	1.84	0.06	56,072	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0

Table 15.6 Kipoi Central Optimisation Results Material Breakdown

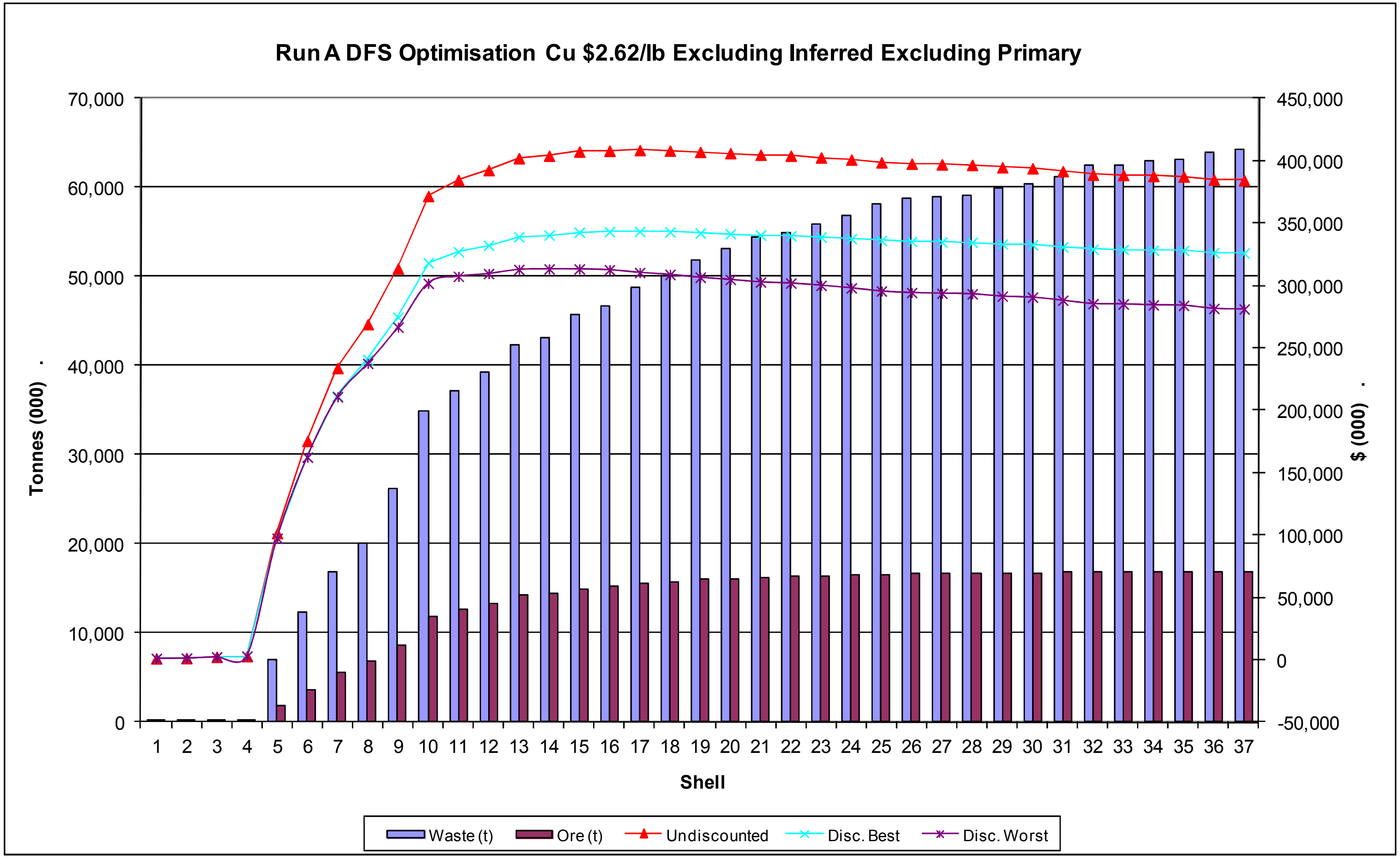

Figure 15-3 Kipoi Central Cash-flow/Tonnage Graph

Kileba
Run A DFS Optimisation Cu $2.62/lb Excluding Inferred Excluding Primary

Shell	Revenue Factor	Base RL	Total Tonnes	Waste Tonnes	Strip Ratio	Ore Tonnes	Feed Grades Cu %	Feed Grades Co %	Recovered Cu t	Mining Cost	Milling Process Cost	Milling Revenue	Undiscounted Cash Flow	Discounted Best	Discounted Worst
1	0.20	1305	3,473	154	0.1	3,319	4.14	0.07	115	14,140	110,543	666,940	542,257	542,219	542,219
2	0.25	1300	18,108	2,439	0.2	15,669	3.06	0.08	404	73,965	503,164	2,331,115	1,753,986	1,753,404	1,753,404
3	0.30	1295	81,600	21,890	0.4	59,710	2.37	0.08	1,192	334,309	1,919,040	6,887,690	4,634,341	4,628,484	4,628,484
4	0.35	1240	3,975,356	2,097,345	1.1	1,878,011	1.89	0.08	29,885	16,174,930	57,293,756	172,615,928	99,147,242	95,280,930	95,280,930
5	0.40	1225	7,920,608	4,595,714	1.4	3,324,894	1.92	0.07	53,564	32,074,220	105,081,015	309,386,514	172,231,279	160,519,725	160,519,725
6	0.45	1225	9,159,195	5,346,563	1.4	3,812,632	1.91	0.06	61,087	36,994,491	122,470,771	352,842,647	193,377,385	178,375,690	178,375,690
7	0.50	1220	10,030,081	5,940,036	1.5	4,090,045	1.90	0.06	65,375	40,434,396	132,533,543	377,612,136	204,644,198	187,662,575	187,662,575
8	0.55	1220	10,754,169	6,469,624	1.5	4,284,545	1.91	0.06	68,792	43,208,122	141,120,937	397,343,456	213,014,396	194,535,160	194,535,160
9	0.60	1220	11,566,328	7,070,572	1.6	4,495,756	1.91	0.06	72,207	46,305,762	150,259,110	417,070,766	220,505,894	200,477,924	200,477,924
10	0.65	1220	11,974,641	7,361,321	1.6	4,613,320	1.90	0.06	73,756	47,905,405	154,767,172	426,018,710	223,346,133	203,035,659	203,008,431
11	0.70	1220	12,565,643	7,817,159	1.7	4,748,484	1.90	0.06	75,766	50,178,156	160,666,898	437,625,757	226,780,703	206,134,135	206,022,545
12	0.75	1215	12,956,011	8,125,076	1.7	4,830,935	1.90	0.06	76,873	51,684,080	163,925,709	444,024,854	228,415,065	207,599,574	207,411,754
13	0.80	1215	13,559,046	8,603,453	1.7	4,955,593	1.89	0.06	78,513	54,025,291	169,110,463	453,494,476	230,358,722	209,330,642	209,000,159
14	0.85	1215	13,999,339	8,964,102	1.8	5,035,237	1.88	0.06	79,552	55,704,337	172,454,749	459,494,519	231,335,433	210,193,538	209,761,604
15	0.90	1215	14,261,454	9,183,233	1.8	5,078,221	1.88	0.06	80,123	56,710,474	174,349,783	462,794,222	231,733,966	210,542,539	210,051,952
16	0.95	1215	14,585,375	9,457,573	1.8	5,127,802	1.88	0.06	80,754	57,948,212	176,485,875	466,442,000	232,007,913	210,777,670	210,214,667
17	1.00	1215	15,081,493	9,882,452	1.9	5,199,041	1.87	0.06	81,613	59,849,981	179,461,911	471,402,152	232,090,260	210,835,818	210,158,101
18	1.05	1215	15,270,691	10,048,337	1.9	5,222,354	1.87	0.06	81,921	60,560,933	180,586,727	473,182,258	232,034,599	210,780,844	210,066,779
19	1.10	1215	15,384,933	10,151,337	1.9	5,233,596	1.87	0.06	82,071	60,995,116	181,080,098	474,049,186	231,973,973	210,724,113	209,991,598
20	1.15	1215	15,769,588	10,489,626	2.0	5,279,962	1.86	0.06	82,573	62,488,062	182,851,467	476,944,945	231,605,416	210,384,439	209,563,047
21	1.20	1215	15,889,340	10,596,570	2.0	5,292,770	1.86	0.06	82,720	62,934,949	183,431,340	477,793,346	231,427,057	210,222,293	209,377,002
22	1.25	1210	16,412,889	11,068,332	2.1	5,344,557	1.86	0.06	83,273	64,972,889	185,405,428	480,990,130	230,611,814	209,483,558	208,534,193
23	1.30	1210	16,752,181	11,379,634	2.1	5,372,547	1.85	0.06	83,584	66,270,259	186,508,883	482,787,237	230,008,096	208,939,403	207,933,437
24	1.35	1210	17,214,319	11,807,391	2.2	5,406,928	1.85	0.06	83,973	68,046,215	187,925,736	485,032,560	229,060,610	208,088,240	207,007,540
25	1.40	1210	18,368,573	12,878,933	2.4	5,489,640	1.84	0.06	84,899	72,502,833	191,292,872	490,381,233	226,585,529	205,871,421	204,600,843
26	1.45	1205	18,649,356	13,143,531	2.4	5,505,825	1.84	0.06	85,095	73,538,488	192,051,867	491,511,045	225,920,691	205,277,894	203,969,818
27	1.50	1205	19,069,778	13,539,264	2.5	5,530,514	1.84	0.06	85,372	75,130,846	193,061,778	493,111,847	224,919,223	204,384,587	203,014,814
28	1.55	1205	19,426,718	13,872,907	2.5	5,553,811	1.84	0.06	85,592	76,520,776	193,870,837	494,383,349	223,991,736	203,558,073	202,127,144
29	1.60	1205	19,978,759	14,392,890	2.6	5,585,869	1.83	0.06	85,914	78,668,674	195,086,110	496,242,353	222,487,569	202,219,610	200,702,106
30	1.65	1205	20,366,757	14,760,364	2.6	5,606,393	1.83	0.06	86,123	80,186,044	195,855,731	497,450,800	221,409,026	201,261,044	199,687,621
31	1.70	1200	20,869,349	15,242,732	2.7	5,626,617	1.83	0.06	86,362	82,026,800	196,727,648	498,833,921	220,079,473	200,080,500	198,448,303
32	1.75	1200	21,180,998	15,545,297	2.8	5,635,701	1.83	0.06	86,497	83,163,360	197,163,511	499,609,787	219,282,916	199,373,634	197,713,260
33	1.80	1200	21,306,463	15,666,057	2.8	5,640,406	1.83	0.06	86,546	83,632,200	197,363,304	499,894,597	218,899,094	199,033,136	197,357,653
34	1.85	1200	21,539,808	15,889,302	2.8	5,650,506	1.83	0.06	86,639	84,545,748	197,716,475	500,428,530	218,166,308	198,383,302	196,674,879
35	1.90	1200	21,801,774	16,143,818	2.9	5,657,956	1.83	0.06	86,736	85,527,334	198,063,615	500,993,106	217,402,157	197,705,771	195,973,740
36	1.95	1200	21,904,848	16,244,904	2.9	5,659,944	1.83	0.06	86,765	85,893,385	198,160,026	501,158,747	217,105,336	197,442,597	195,703,156
37	2.00	1200	21,968,062	16,306,903	2.9	5,661,159	1.83	0.06	86,780	86,121,706	198,226,157	501,244,191	216,896,329	197,257,283	195,513,099

Figure 15-4 Kileba Optimisation Results Summary

Kileba
Run A DFS Optimisation Cu $2.62/lb Excluding Inferred Excluding Primary
Material Breakdown

Oxide C1								Oxide C2								Transitional								Primary							
Indicated				Inferred				Indicated				Inferred				Indicated				Inferred				Indicated				Inferred			
Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec
Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t
928	5.62	0.07	44	0	0.00	0.00	0	2,391	3.56	0.07	72	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
3,052	4.44	0.07	114	0	0.00	0.00	0	12,617	2.73	0.08	290	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
11,729	3.12	0.07	307	0	0.00	0.00	0	47,981	2.19	0.08	886	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
113,759	2.40	0.10	2,294	0	0.00	0.00	0	1,748,003	1.85	0.08	27,218	0	0.00	0.00	0	16,249	2.77	0.09	373	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
281,870	2.61	0.08	6,161	0	0.00	0.00	0	2,926,727	1.76	0.07	43,459	0	0.00	0.00	0	116,297	4.09	0.08	3,944	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
334,872	2.58	0.08	7,236	0	0.00	0.00	0	3,281,295	1.73	0.06	47,660	0	0.00	0.00	0	196,465	3.80	0.08	6,191	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
358,245	2.52	0.07	7,589	0	0.00	0.00	0	3,480,330	1.71	0.06	50,186	0	0.00	0.00	0	251,470	3.64	0.07	7,600	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
366,463	2.52	0.07	7,745	0	0.00	0.00	0	3,570,291	1.70	0.06	51,204	0	0.00	0.00	0	347,791	3.41	0.07	9,842	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
374,803	2.50	0.07	7,861	0	0.00	0.00	0	3,674,808	1.69	0.06	52,360	0	0.00	0.00	0	446,145	3.24	0.07	11,986	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
384,934	2.48	0.07	8,003	0	0.00	0.00	0	3,750,506	1.68	0.06	53,078	0	0.00	0.00	0	477,880	3.20	0.07	12,675	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
391,509	2.47	0.07	8,105	0	0.00	0.00	0	3,814,948	1.67	0.06	53,731	0	0.00	0.00	0	542,027	3.10	0.07	13,929	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
396,885	2.46	0.07	8,183	0	0.00	0.00	0	3,865,468	1.67	0.06	54,234	0	0.00	0.00	0	568,582	3.06	0.07	14,457	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
407,877	2.44	0.07	8,339	0	0.00	0.00	0	3,931,395	1.66	0.06	54,870	0	0.00	0.00	0	616,321	2.99	0.07	15,303	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
413,255	2.43	0.07	8,411	0	0.00	0.00	0	3,973,221	1.65	0.06	55,259	0	0.00	0.00	0	648,761	2.95	0.06	15,881	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
418,267	2.42	0.07	8,485	0	0.00	0.00	0	3,991,578	1.65	0.06	55,430	0	0.00	0.00	0	668,376	2.92	0.06	16,208	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
423,279	2.41	0.07	8,550	0	0.00	0.00	0	4,014,878	1.65	0.06	55,645	0	0.00	0.00	0	689,645	2.89	0.06	16,560	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
431,422	2.39	0.07	8,660	0	0.00	0.00	0	4,051,138	1.64	0.06	55,961	0	0.00	0.00	0	716,481	2.86	0.06	16,992	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
433,153	2.39	0.07	8,680	0	0.00	0.00	0	4,058,181	1.64	0.06	56,017	0	0.00	0.00	0	731,020	2.84	0.06	17,224	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
433,960	2.39	0.07	8,691	0	0.00	0.00	0	4,063,309	1.64	0.06	56,067	0	0.00	0.00	0	736,327	2.83	0.06	17,314	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
440,435	2.38	0.07	8,780	0	0.00	0.00	0	4,092,126	1.63	0.06	56,310	0	0.00	0.00	0	747,401	2.82	0.06	17,483	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
441,123	2.37	0.07	8,787	0	0.00	0.00	0	4,097,461	1.63	0.06	56,353	0	0.00	0.00	0	754,186	2.81	0.06	17,579	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
453,443	2.35	0.07	8,938	0	0.00	0.00	0	4,127,229	1.63	0.06	56,597	0	0.00	0.00	0	763,885	2.80	0.06	17,737	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
455,235	2.35	0.07	8,965	0	0.00	0.00	0	4,144,485	1.63	0.06	56,746	0	0.00	0.00	0	772,827	2.79	0.06	17,874	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
461,052	2.34	0.07	9,038	0	0.00	0.00	0	4,161,712	1.62	0.06	56,880	0	0.00	0.00	0	784,164	2.77	0.06	18,056	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
473,390	2.31	0.07	9,188	0	0.00	0.00	0	4,205,438	1.62	0.06	57,225	0	0.00	0.00	0	810,812	2.75	0.06	18,486	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
473,689	2.31	0.07	9,192	0	0.00	0.00	0	4,211,544	1.62	0.06	57,271	0	0.00	0.00	0	820,592	2.74	0.06	18,632	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
475,659	2.31	0.07	9,216	0	0.00	0.00	0	4,225,284	1.61	0.06	57,382	0	0.00	0.00	0	829,571	2.73	0.06	18,774	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
477,569	2.31	0.07	9,236	0	0.00	0.00	0	4,243,277	1.61	0.06	57,528	0	0.00	0.00	0	832,965	2.72	0.06	18,828	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
481,388	2.30	0.07	9,282	0	0.00	0.00	0	4,263,857	1.61	0.06	57,684	0	0.00	0.00	0	840,624	2.72	0.06	18,948	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
483,594	2.29	0.07	9,307	0	0.00	0.00	0	4,277,445	1.60	0.06	57,793	0	0.00	0.00	0	845,354	2.71	0.06	19,022	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,145	2.29	0.07	9,325	0	0.00	0.00	0	4,287,159	1.60	0.06	57,872	0	0.00	0.00	0	854,313	2.70	0.06	19,165	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,145	2.29	0.07	9,325	0	0.00	0.00	0	4,290,319	1.60	0.06	57,899	0	0.00	0.00	0	860,237	2.70	0.06	19,273	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,235	2.29	0.07	9,326	0	0.00	0.00	0	4,292,824	1.60	0.06	57,915	0	0.00	0.00	0	862,347	2.70	0.06	19,305	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,652	2.29	0.07	9,331	0	0.00	0.00	0	4,300,743	1.60	0.06	57,976	0	0.00	0.00	0	864,111	2.70	0.06	19,331	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,771	2.29	0.07	9,333	0	0.00	0.00	0	4,303,634	1.60	0.06	57,998	0	0.00	0.00	0	868,551	2.69	0.06	19,405	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,771	2.29	0.07	9,333	0	0.00	0.00	0	4,304,289	1.60	0.06	58,003	0	0.00	0.00	0	869,884	2.69	0.06	19,429	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
485,771	2.29	0.07	9,333	0	0.00	0.00	0	4,304,438	1.60	0.06	58,004	0	0.00	0.00	0	870,950	2.69	0.06	19,443	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0

Table 15.7 Kileba Optimisation Results Material Breakdown

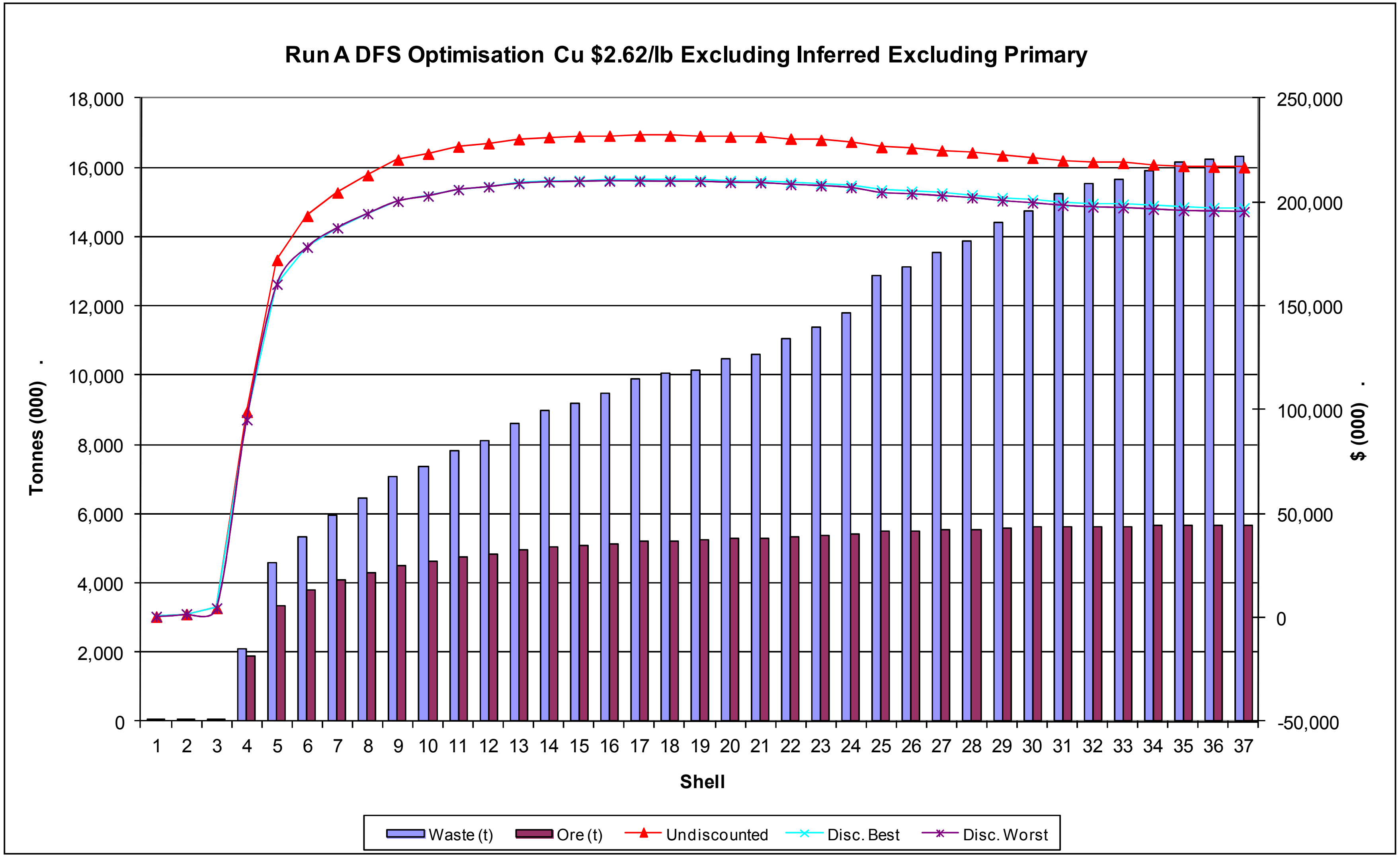

Figure 15-5 Kileba Cash-flow/Tonnage Graph

Kipoi North
Run B DFS Optimisation Cu $2.62/lb Excluding Inferred Excluding Primary 30 Degree Wall Angles

Shell	Revenue	Base	Total	Waste	Strip	Ore	Feed Grades		Recovered	Mining	Milling		Undiscounted	Discounted	Discounted
	Factor	RL	Tonnes	Tonnes	Ratio	Tonnes	Cu %	Co %	Cu t	Cost	Process Cost	Revenue	Cash Flow	Best	Worst
1	0.20	1270	3,681	230	0.1	3,451	5.16	0.17	126	14,870	148,140	726,086	563,076	563,035	563,035
2	0.25	1265	9,382	219	0.0	9,163	4.46	0.17	288	37,895	393,772	1,665,678	1,234,012	1,233,772	1,233,772
3	0.30	1265	27,466	2,542	0.1	24,924	3.73	0.14	664	111,266	1,056,364	3,837,115	2,669,485	2,668,076	2,668,076
4	0.35	1265	39,050	5,469	0.2	33,581	3.47	0.13	833	158,183	1,424,656	4,809,559	3,226,720	3,224,425	3,224,425
5	0.40	1260	75,107	22,049	0.4	53,058	3.13	0.12	1,194	305,648	2,230,905	6,897,693	4,361,141	4,356,243	4,356,243
6	0.45	1260	113,997	39,454	0.5	74,543	2.89	0.11	1,557	464,007	3,129,871	8,990,890	5,397,012	5,388,498	5,388,498
7	0.50	1255	162,036	66,340	0.7	95,696	2.74	0.11	1,898	658,489	4,014,830	10,964,065	6,290,746	6,278,008	6,278,008
8	0.55	1255	202,676	90,118	0.8	112,558	2.64	0.10	2,155	825,347	4,712,944	12,449,367	6,911,076	6,894,620	6,894,620
9	0.60	1235	647,423	412,266	1.8	235,157	2.42	0.08	4,094	2,669,245	9,905,053	23,646,923	11,072,625	11,017,613	11,017,613
10	0.65	1220	1,320,601	942,381	2.5	378,220	2.28	0.06	6,321	5,486,275	15,768,597	36,512,223	15,257,350	15,135,616	15,135,616
11	0.70	1210	2,150,701	1,598,246	2.9	552,455	2.19	0.06	8,912	8,897,350	22,974,636	51,475,013	19,603,027	19,374,988	19,374,988
12	0.75	1205	2,781,465	2,118,700	3.2	662,765	2.14	0.06	10,534	11,481,694	27,398,977	60,845,078	21,964,408	21,658,239	21,658,239
13	0.80	1205	3,298,736	2,543,300	3.4	755,436	2.09	0.05	11,819	13,561,530	31,121,245	68,267,105	23,584,331	23,209,980	23,209,980
14	0.85	1205	3,451,225	2,667,396	3.4	783,829	2.08	0.05	12,184	14,181,703	32,288,695	70,373,838	23,903,440	23,509,882	23,509,882
15	0.90	1200	4,258,266	3,368,644	3.8	889,622	2.05	0.05	13,674	17,494,699	36,520,285	78,981,207	24,966,223	24,500,208	24,500,208
16	0.95	1200	6,590,773	5,423,543	4.7	1,167,230	1.99	0.05	17,493	26,954,502	47,897,864	101,042,206	26,189,840	25,550,313	25,550,313
17	1.00	1200	6,951,488	5,740,402	4.7	1,211,086	1.98	0.05	18,079	28,415,752	49,743,007	104,422,866	26,264,107	25,598,978	25,598,978
18	1.05	1195	7,854,642	6,560,570	5.1	1,294,072	1.97	0.05	19,285	32,088,023	53,066,042	111,392,283	26,238,219	25,528,835	25,528,835
19	1.10	1195	7,903,263	6,601,300	5.1	1,301,963	1.97	0.05	19,371	32,286,303	53,397,815	111,885,052	26,200,934	25,488,298	25,488,298
20	1.15	1195	8,287,633	6,946,309	5.2	1,341,324	1.96	0.05	19,861	33,857,861	55,019,811	114,719,763	25,842,091	25,118,266	25,118,266
21	1.20	1190	9,367,402	7,935,882	5.5	1,431,520	1.95	0.05	21,044	38,233,242	58,825,430	121,552,769	24,494,097	23,762,590	23,762,590
22	1.25	1190	10,972,237	9,425,365	6.1	1,546,872	1.94	0.05	22,666	44,881,322	63,567,147	130,918,508	22,470,039	21,745,787	21,745,787
23	1.30	1185	11,147,281	9,585,469	6.1	1,561,812	1.93	0.05	22,838	45,590,416	64,150,123	131,910,996	22,170,457	21,449,072	21,449,072
24	1.35	1185	11,818,177	10,213,649	6.4	1,604,528	1.93	0.05	23,399	48,303,629	65,873,863	135,154,226	20,976,734	20,275,839	20,275,839
25	1.40	1185	12,496,265	10,851,699	6.6	1,644,566	1.92	0.05	23,957	51,057,837	67,635,742	138,377,221	19,683,641	19,009,825	19,009,825
26	1.45	1185	12,931,110	11,259,662	6.7	1,671,448	1.92	0.05	24,298	52,782,459	68,829,290	140,346,837	18,735,088	18,083,444	18,083,444
27	1.50	1185	14,664,295	12,890,450	7.3	1,773,845	1.90	0.05	25,555	59,857,383	72,952,052	147,607,668	14,798,233	14,252,577	14,252,577
28	1.55	1175	16,720,720	14,842,774	7.9	1,877,946	1.89	0.05	26,950	68,080,433	77,676,386	155,662,082	9,905,263	9,519,014	9,519,014
29	1.60	1175	16,826,379	14,942,318	7.9	1,884,061	1.89	0.05	27,015	68,498,631	77,935,350	156,039,338	9,605,358	9,229,608	9,229,608
30	1.65	1170	17,267,403	15,363,419	8.1	1,903,984	1.88	0.05	27,276	70,224,603	78,834,059	157,549,829	8,491,168	8,155,562	8,155,562
31	1.70	1170	17,438,055	15,526,109	8.1	1,911,946	1.88	0.05	27,373	70,903,997	79,189,083	158,105,785	8,012,706	7,694,712	7,694,712
32	1.75	1170	18,268,628	16,321,398	8.4	1,947,230	1.88	0.05	27,812	74,252,110	80,689,217	160,643,671	5,702,345	5,471,950	5,471,950
33	1.80	1170	19,453,893	17,470,865	8.8	1,983,028	1.88	0.05	28,366	78,745,328	82,513,148	163,841,212	2,582,737	2,476,507	2,476,507
34	1.85	1170	19,921,066	17,921,731	9.0	1,999,335	1.88	0.05	28,587	80,636,395	83,231,846	165,119,753	1,251,511	1,199,621	1,199,621
35	1.90	1170	20,263,230	18,252,559	9.1	2,010,671	1.87	0.05	28,726	81,987,825	83,733,877	165,920,667	198,964	190,669	190,669
36	1.95	1170	20,580,884	18,558,628	9.2	2,022,256	1.87	0.05	28,867	83,276,909	84,231,827	166,738,491	-770,245	-737,951	-737,951
37	2.00	1165	20,888,745	18,858,023	9.3	2,030,722	1.87	0.05	28,983	84,465,285	84,648,324	167,407,510	-1,706,099	-1,634,274	-1,634,274

Table 15.8 Kipoi North Optimisation Results Summary

Kipoi North Run B DFS Optimisation Cu $2.62/lb Excluding Inferred Excluding Primary 30 Degree Wall Angles Material Summary																															
Oxide C1								Oxide C2								Transitional								Primary							
Indicated				Inferred				Indicated				Inferred				Indicated				Inferred				Indicated				Inferred			
Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec	Ore	Feed Grades		Rec
Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t	Tonnes	Cu %	Co %	Cu t
3,451	5.16	0.17	126	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
9,163	4.46	0.17	288	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
22,372	3.96	0.15	625	0	0.00	0.00	0	2,552	1.74	0.11	39	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
30,226	3.67	0.14	784	0	0.00	0.00	0	3,355	1.64	0.10	49	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
44,670	3.42	0.13	1,079	0	0.00	0.00	0	8,388	1.55	0.10	115	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
61,866	3.15	0.12	1,377	0	0.00	0.00	0	12,677	1.60	0.09	180	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
78,872	3.01	0.11	1,677	0	0.00	0.00	0	16,824	1.49	0.09	221	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
91,576	2.91	0.11	1,880	0	0.00	0.00	0	20,982	1.48	0.09	276	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
203,531	2.56	0.08	3,682	0	0.00	0.00	0	31,626	1.47	0.08	412	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
304,436	2.42	0.07	5,206	0	0.00	0.00	0	73,784	1.71	0.06	1,116	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
436,364	2.30	0.06	7,095	0	0.00	0.00	0	116,091	1.77	0.05	1,817	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
498,547	2.25	0.06	7,912	0	0.00	0.00	0	164,218	1.80	0.05	2,622	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
551,858	2.21	0.06	8,616	0	0.00	0.00	0	203,578	1.78	0.05	3,203	0	0.00	0.00	0	0	0.00	0.00	0		0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
572,574	2.19	0.06	8,863	0	0.00	0.00	0	211,255	1.78	0.05	3,321	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
631,243	2.15	0.05	9,582	0	0.00	0.00	0	258,379	1.79	0.05	4,091	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
821,217	2.10	0.05	12,160	0	0.00	0.00	0	343,955	1.74	0.04	5,292	0	0.00	0.00	0	2,058	2.43	0.03	41	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
849,740	2.09	0.05	12,513	0	0.00	0.00	0	355,949	1.73	0.04	5,464	0	0.00	0.00	0	5,397	2.26	0.03	101	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
895,329	2.07	0.05	13,080	0	0.00	0.00	0	393,190	1.75	0.04	6,101	0	0.00	0.00	0	5,553	2.25	0.03	104	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
900,316	2.07	0.05	13,135	0	0.00	0.00	0	395,461	1.75	0.04	6,122	0	0.00	0.00	0	6,186	2.21	0.03	114	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
925,060	2.06	0.05	13,438	0	0.00	0.00	0	408,659	1.74	0.04	6,284	0	0.00	0.00	0	7,605	2.22	0.03	140	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
982,039	2.04	0.05	14,130	0	0.00	0.00	0	434,268	1.72	0.04	6,612	0	0.00	0.00	0	15,213	2.39	0.04	302	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,061,858	2.03	0.05	15,250	0	0.00	0.00	0	468,061	1.71	0.04	7,080	0	0.00	0.00	0	16,953	2.39	0.04	336	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,067,888	2.03	0.05	15,314	0	0.00	0.00	0	476,971	1.70	0.04	7,187	0	0.00	0.00	0	16,953	2.39	0.04	336	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,087,839	2.03	0.05	15,586	0	0.00	0.00	0	497,702	1.69	0.04	7,441	0	0.00	0.00	0	18,987	2.36	0.04	372	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,109,815	2.03	0.05	15,875	0	0.00	0.00	0	507,340	1.69	0.04	7,567	0	0.00	0.00	0	27,411	2.27	0.04	516	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,127,339	2.02	0.05	16,084	0	0.00	0.00	0	511,478	1.68	0.04	7,612	0	0.00	0.00	0	32,631	2.22	0.04	602	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,174,462	2.01	0.05	16,654	0	0.00	0.00	0	562,510	1.65	0.04	8,229	0	0.00	0.00	0	36,873	2.20	0.04	672	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,215,719	1.99	0.05	17,120	0	0.00	0.00	0	591,055	1.63	0.04	8,548	0	0.00	0.00	0	71,172	2.17	0.04	1,281	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,219,471	1.99	0.05	17,161	0	0.00	0.00	0	592,782	1.63	0.04	8,566	0	0.00	0.00	0	71,808	2.16	0.04	1,289	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,229,655	1.99	0.05	17,285	0	0.00	0.00	0	596,857	1.63	0.04	8,615	0	0.00	0.00	0	77,472	2.14	0.04	1,376	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,232,067	1.99	0.05	17,313	0	0.00	0.00	0	599,872	1.63	0.04	8,648	0	0.00	0.00	0	80,007	2.13	0.04	1,412	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,247,343	1.99	0.05	17,485	0	0.00	0.00	0	614,018	1.62	0.04	8,813	0	0.00	0.00	0	85,869	2.12	0.04	1,514	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,255,785	1.98	0.05	17,576	0	0.00	0.00	0	617,527	1.62	0.04	8,847	0	0.00	0.00	0	109,716	2.13	0.04	1,943	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,260,207	1.98	0.05	17,639	0	0.00	0.00	0	624,501	1.62	0.04	8,926	0	0.00	0.00	0	114,627	2.13	0.04	2,022	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,265,701	1.98	0.05	17,697	0	0.00	0.00	0	627,490	1.61	0.04	8,960	0	0.00	0.00	0	117,480	2.12	0.04	2,068	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,271,061	1.98	0.05	17,762	0	0.00	0.00	0	631,648	1.61	0.04	9,006	0	0.00	0.00	0	119,547	2.12	0.04	2,099	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0
1,273,607	1.98	0.05	17,792	0	0.00	0.00	0	632,825	1.61	0.04	9,017	0	0.00	0.00	0	124,290	2.11	0.04	2,174	0	0.00	0.00	0	0	0.00	0.00	0	0	0.00	0.00	0

Table 15.9 Kipoi North Optimisation Results Material Breakdown

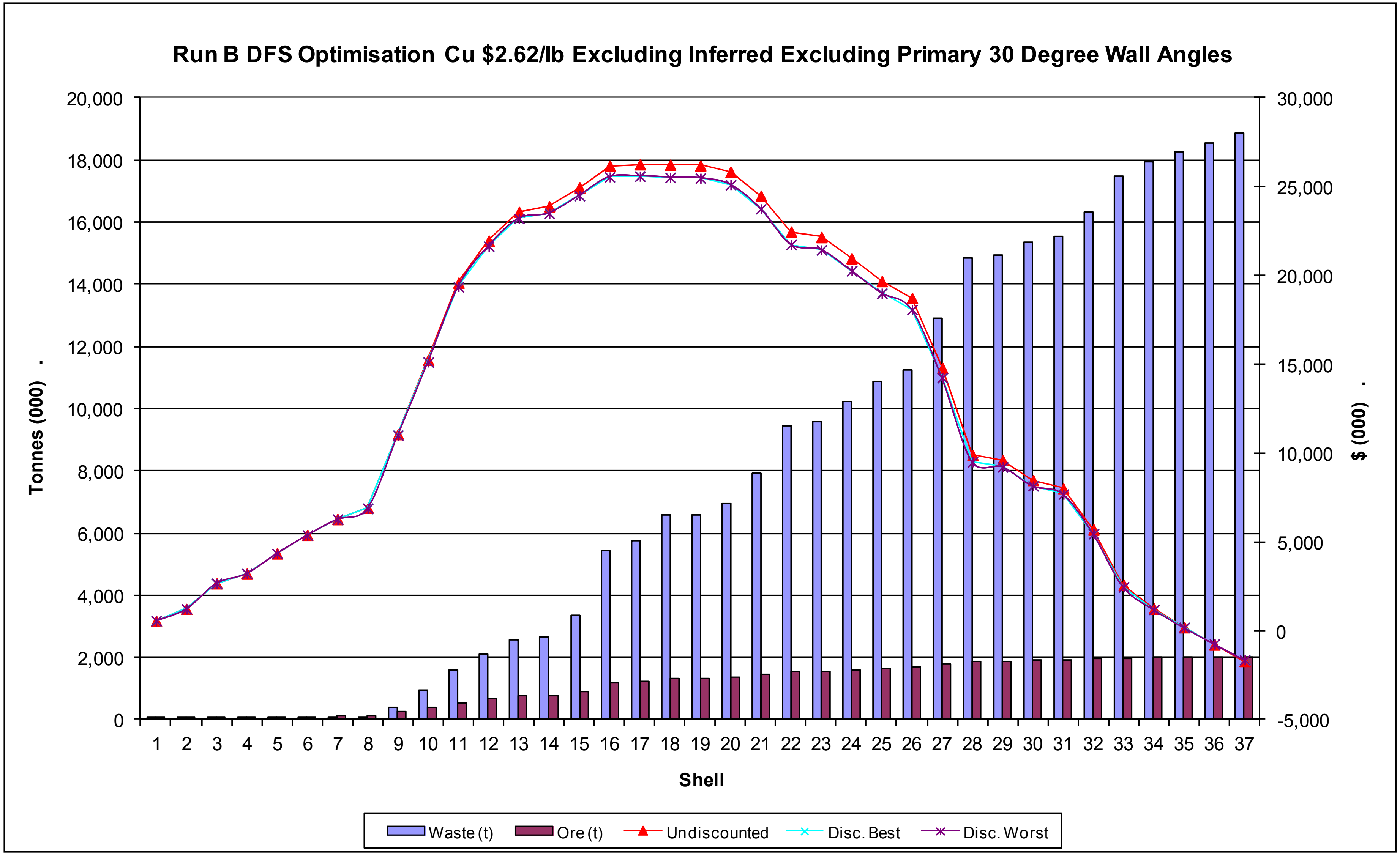

Figure 15-6 Kipoi North Cash-flow/Tonnage Graph

15.5 PIT DESIGNS

Final and staged designs were prepared for each deposit to enable practical and efficient access to each bench with the stages serving the purpose of maximising ore extraction while attempting to defer waste stripping.

The designs were based on the selected optimised shells and prepared using the following design criteria based on recommendations by George, Orr and Associates, outlined in a letter dated 9th October 2012 and subsequently confirmed in a detailed geotechnical report.

For Kipoi Central – 10m bench height, batter angle of 80^{o}, 12m wide berms and 20m wide berms for every 50m vertical interval

For Kileba - 10m bench height, batter angle of 80^{o}, 10m wide berms and a 20m wide berm to be mined at around mid-slope height (about 60m depth).

The Kipoi North pit has been subdivided on the basis of rock weathering depths into two (2) separate domains; Domain 1 extending from between the likely western pit boundary (at around Easting 509900m) and Easting 510250m, and Domain 2 extending eastwards from Easting 510250m to the eastern pit boundary located at around Easting 510650m . The design parameters for either domain are as follows:

Domain 1 - 10m bench height, mined at nominal face angles of 80^{o}, separated by 10m wide berms.

Domain 2 - 10m bench height, mined at nominal face angles of 80^{o}, separated by 10m wide berms for weathered rocks (between surface and 1260mRL) and 10m vertical height benches, mined at nominal face angles of 80^{o}, separated by 8m wide berms in fresh rocks (below 1260RL)

All pits were generally designed with a 25m wide dual lane ramps at a maximum gradient of 1 in 10 or 10% for ramps designed above the bottom 30 vertical metres of the pit base and 12m wide single lane ramps at a maximum gradient of 1 in 10 (5.7degrees, or 10%) for approximately 50 vertical metres at the base of each pit.

15.6 KIPOI CENTRAL STAGE 2 PIT

The Kipoi Central Stage 2 Pit is designed as a cutback to the existing and currently being mined Kipoi Central Stage 1 Pit (Stage 1) and extends south-west off the Stage 1 pit. The pit consists of the main pit trending south-west and which will be mined in two stages (Stages 2A & 2B), and a satellite pit west of the main pit (Figure 15-10). All stages of the pit generally come off the side of a hill in the west down to a flat or near flat valley elevation in the east and as such in most instances will require a series of temporary accesses to be used to lower the upper benches down to the ramp take-off positions.

For Stage 2A, the top 60m will be mined via a series of temporary ramps down to the main ramp start position on the 1305RL (Figure 15-7). A clockwise ramp on the east wall commences on the 1305RL, and trends along southwards, and bending towards the western wall. From the RL, the ramp changes to a single lane ramp down to the pit base on the 1185RL.

Stage 2B is a further south-west extension of Stage 2A, and similar to Stage 2A, will involve a series of temporary accesses to mine the upper benches down to the ramp start elevation. The ramp accessing this stage offsets approximately 50m east from the Stage 2A ramp start position and similaRLy trends along the eastern wall, spiralling down to the 1185RL (Figure 15-8). Again a 12m single lane ramp accesses the bottom 20m from the 1205RL to the 1185RL.

The satellite pit (Figure 15-9) is a single stage pit -west of the main Kipoi Central Stage 2 pit. Similar to Stages 2A & 2B, this pit comes off the side of a hill, hence the first 55m (1355 – 1300RL) will be mined using a series of temporary accesses. The main pit ramp commences on the 1300RL and moves along the western wall in an anti-clockwise direction and spirals down to the base of the pit on the 1265RL.

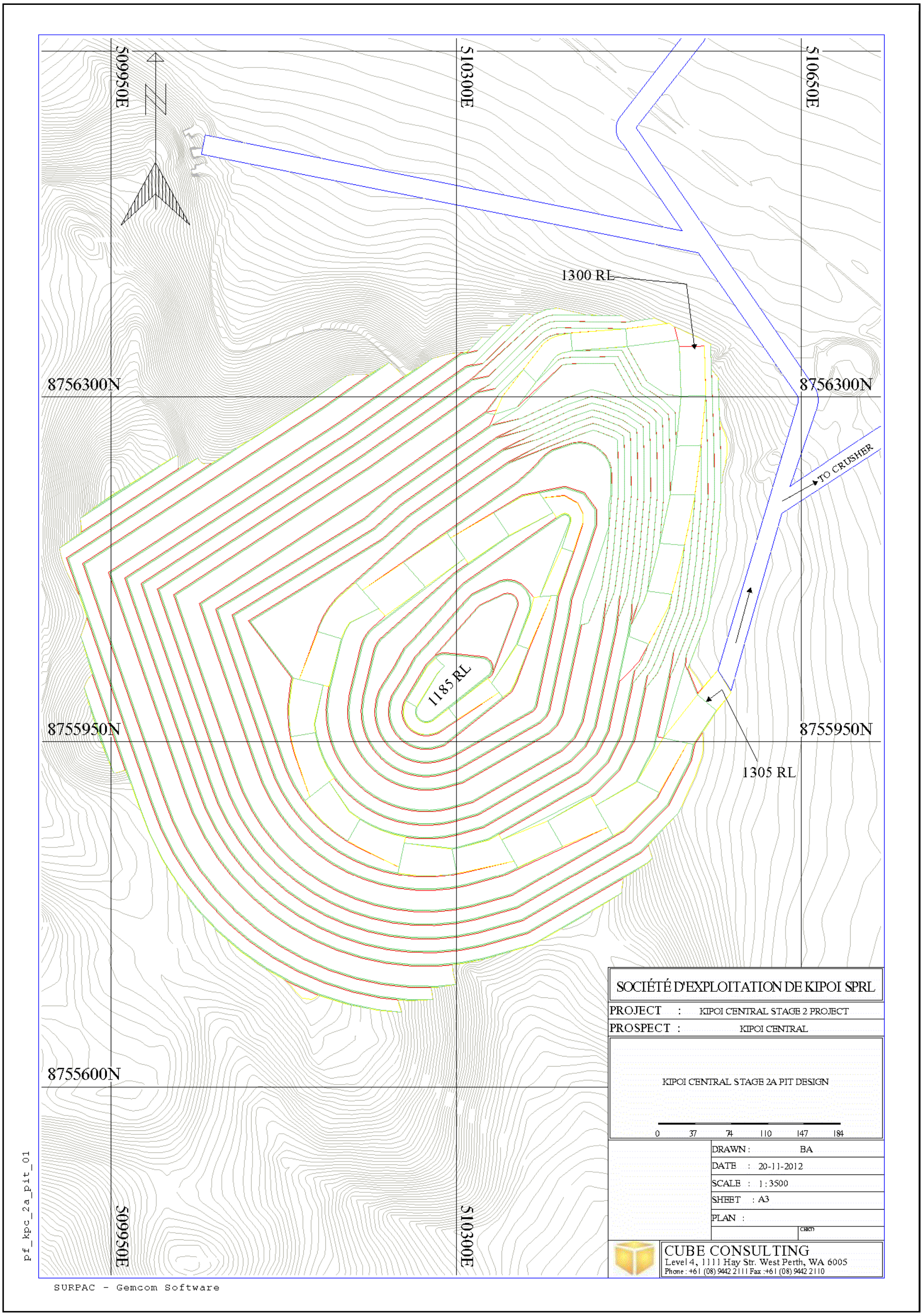

Figure 15-7 Kipoi Central Stage 2A Pit Design

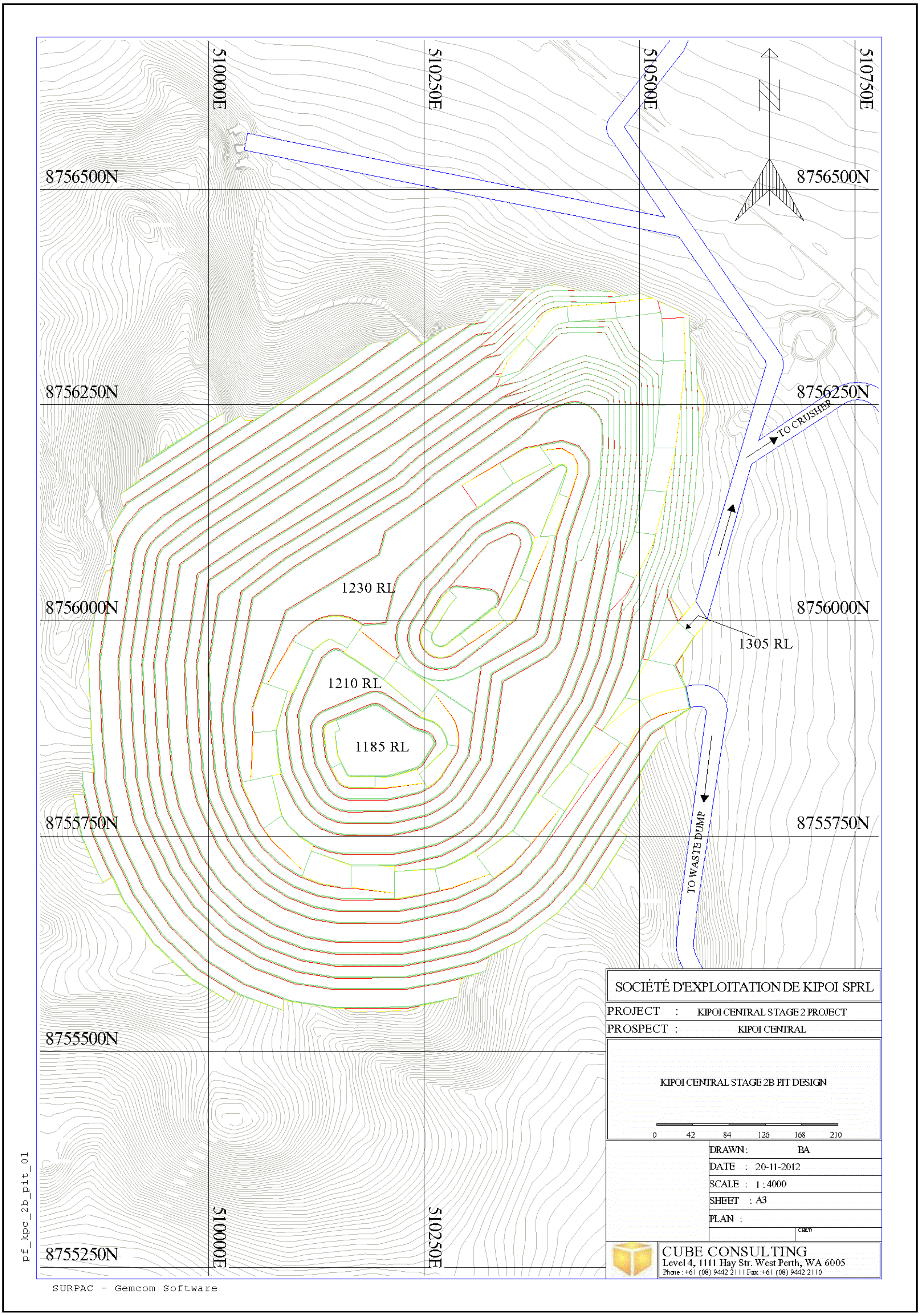

Figure 15-8 Kipoi Central Stage 2B Pit Design

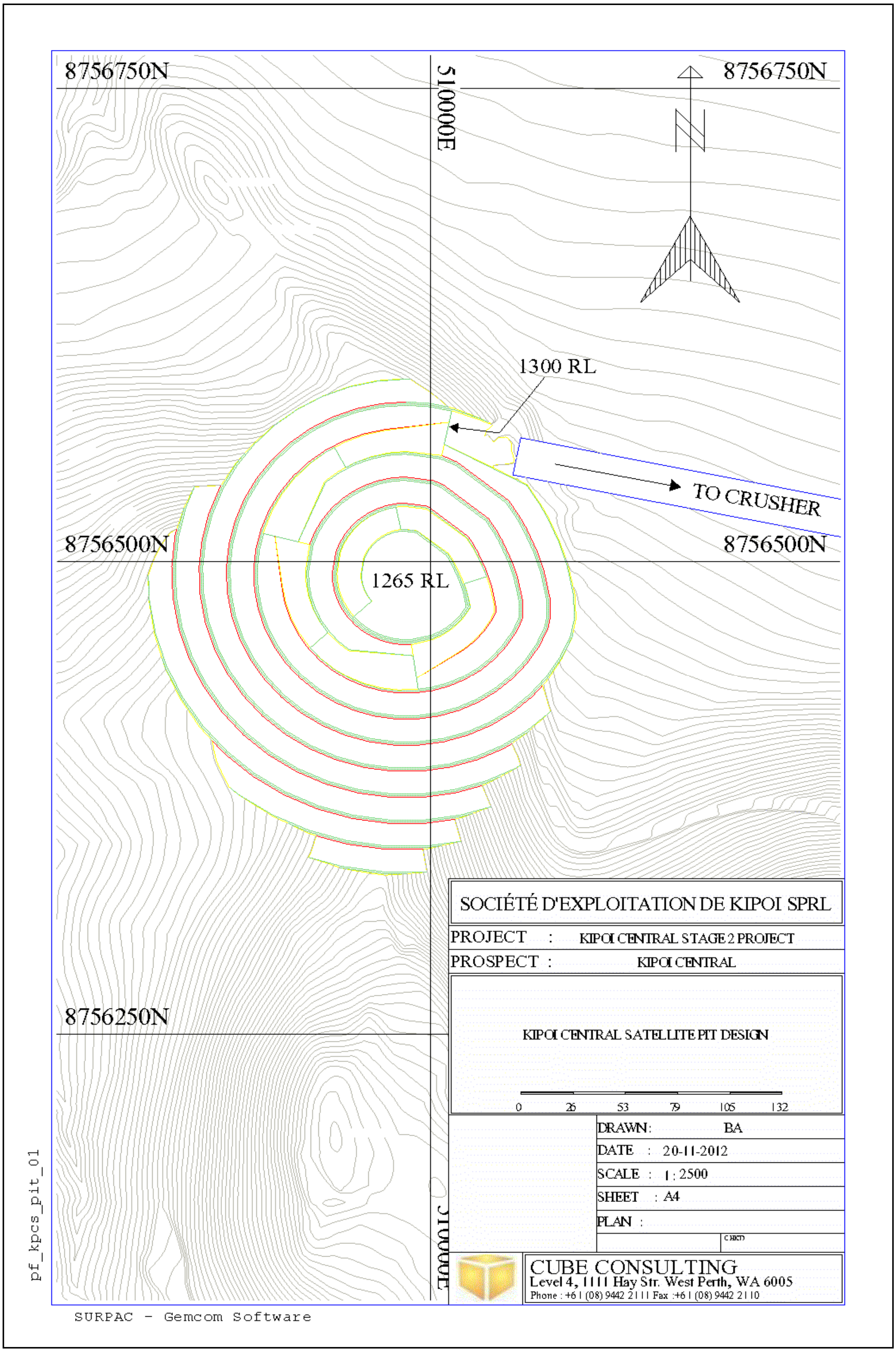

Figure 15-9 Kipoi Central Satellite Pit Design

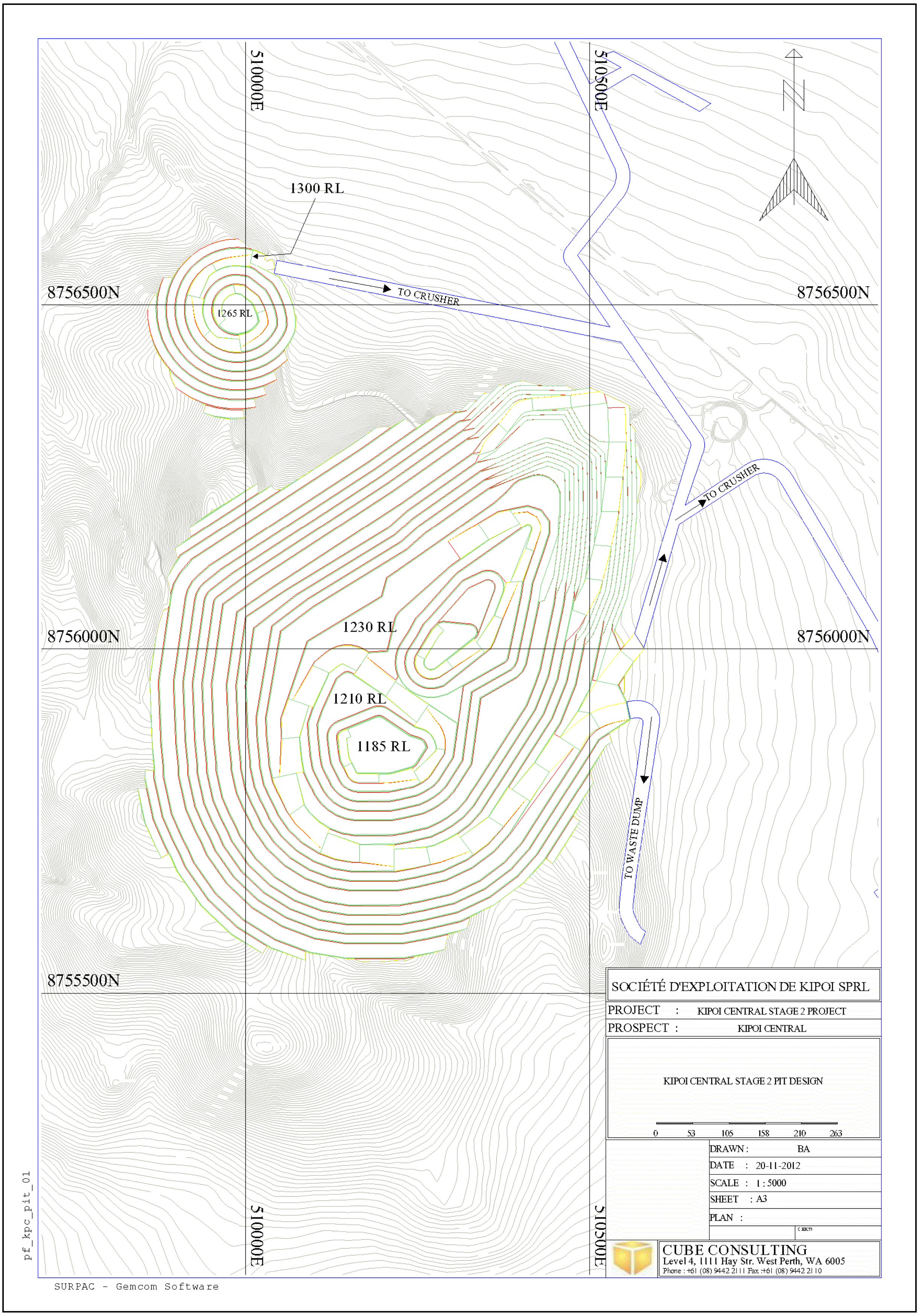

Figure 15-10 Final Kipoi Central Stage 2 Pit

15.7 KILEBA PIT

The Kileba pit (Figure 15-11) is a single stage pit on a north-west – south-east trend. The top 45m (from 1325RL -1280RL) will be mined using a series of temporary access to the pit down to the 1280RL. A 25m dual lane ramp along the east wall commences from the north-east end of the pit on the 1280RL trending south to the 1250RL. The ramp is narrowed to a 12m single access from this RL to the 1230RL from where it switched back in the centre of the pit to mine the last two benches on the 1225 and 1220RL's.

15.8 KIPOI NORTH PIT

The Kipoi North pit consist two designs along strike namely; Kipoi North-East Pit (between 510.250E and 510.650E) and Kipoi North-West Pit (509.900E and 510.250E).

The Kipoi North-East pit comes off the side of a hill in the east for the top 20m (1295-1275RL), with the ramp taking off in the south on the 1275RL. The ramp trends along the south-west wall as a 25m dual lane access down to the 1245RL from which it becomes a single lane ramp. It bends north and snakes around the east wall, making another loop south, terminating in the west wall on the 1205RL.

The Kipoi North-West pit ramp follows a similar trajectory as the Kipoi North-East pit, with the ramp start position in the south, making its way along the west wall, spiralling down and terminating on the east on the 1205RL. From the 1250RL, and for 45m vertical height, the ramp trends as a 12m single lane access down to the 1205RL.

Results are shown in Figure 15-12, Figure 15-13 and Figure 15-14.

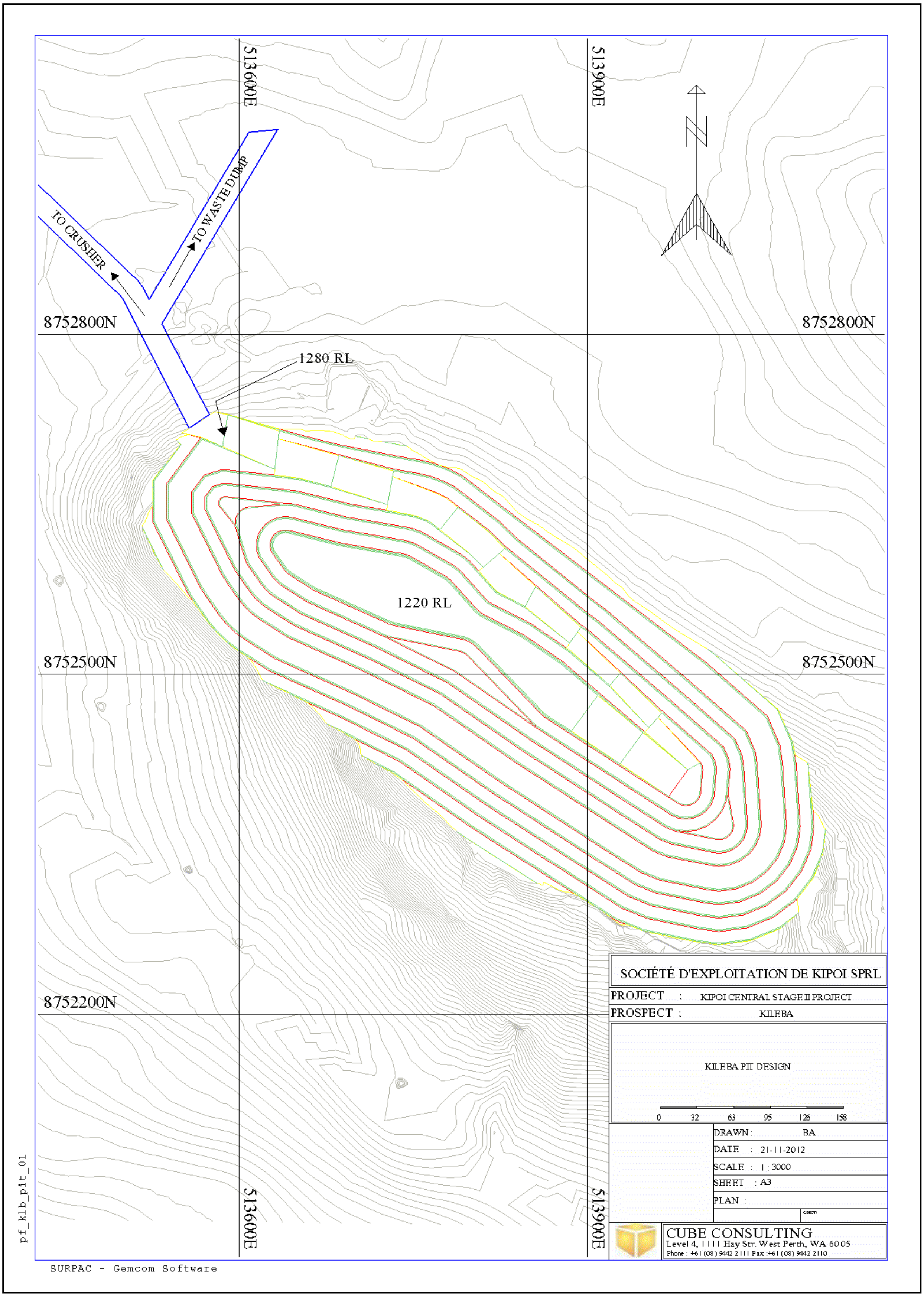

Figure 15-11 Kileba Pit Design

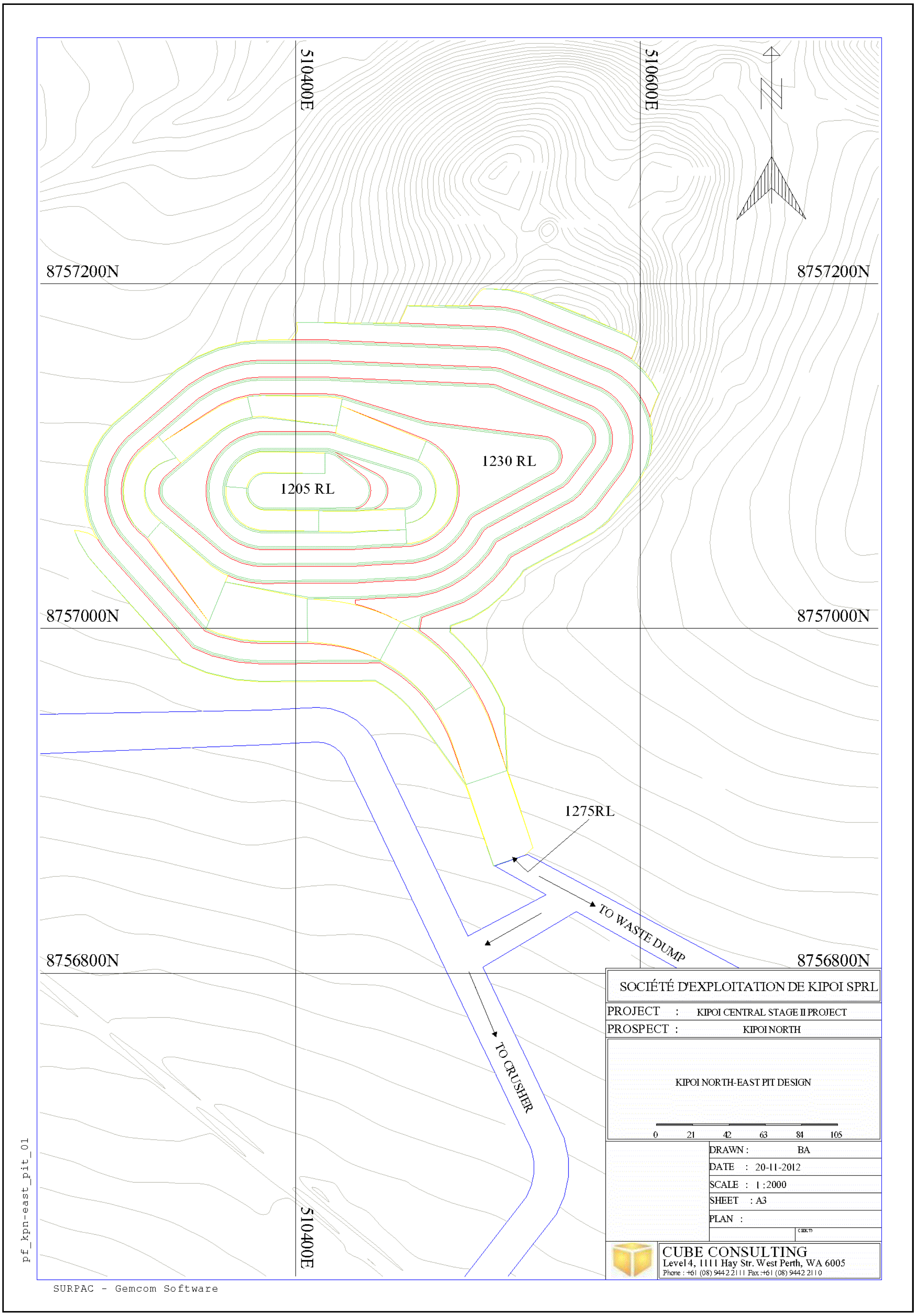

Figure 15-12 Kipoi North-East Pit Design

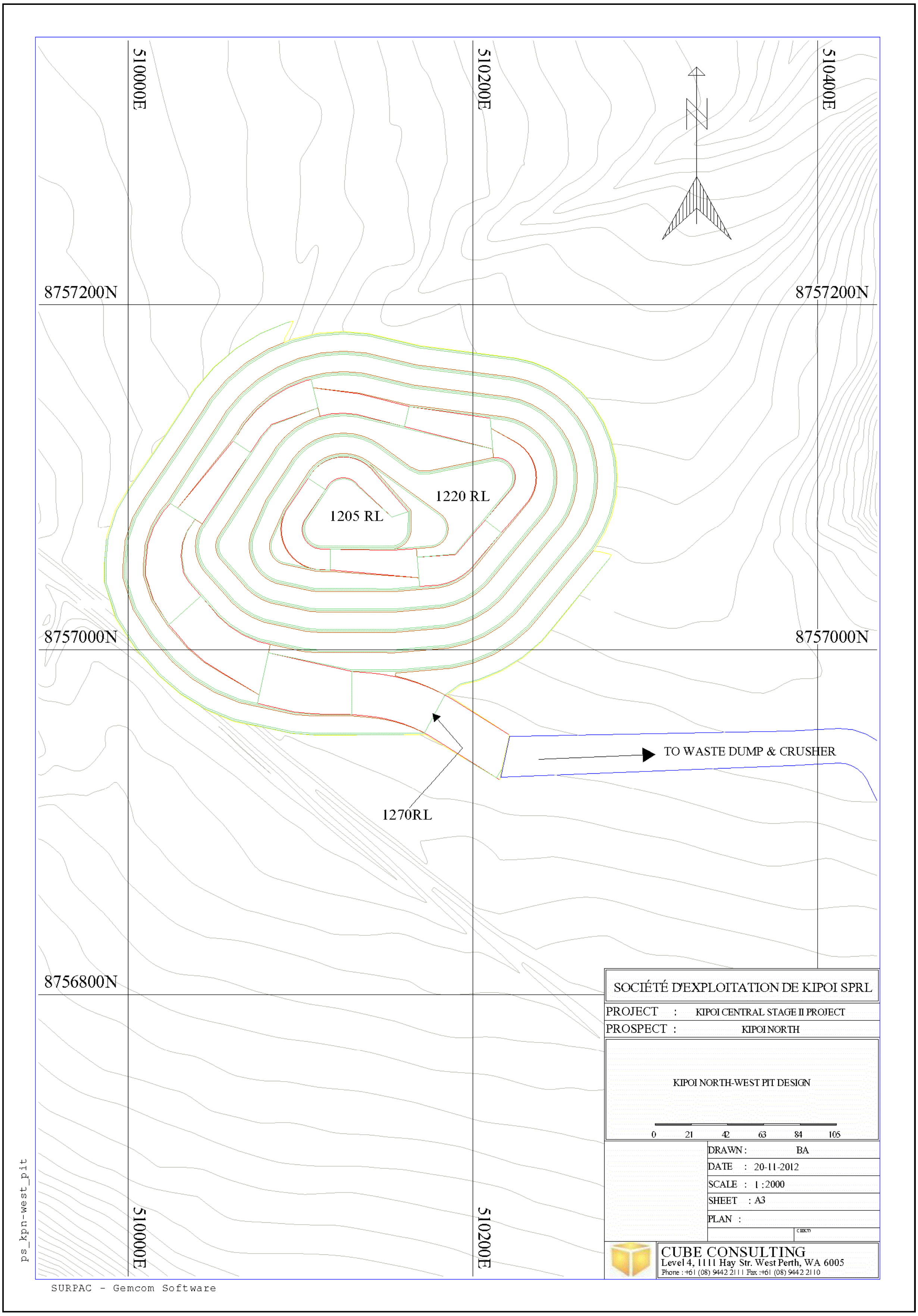

Figure 15-13 Kipoi North – West Pit Design

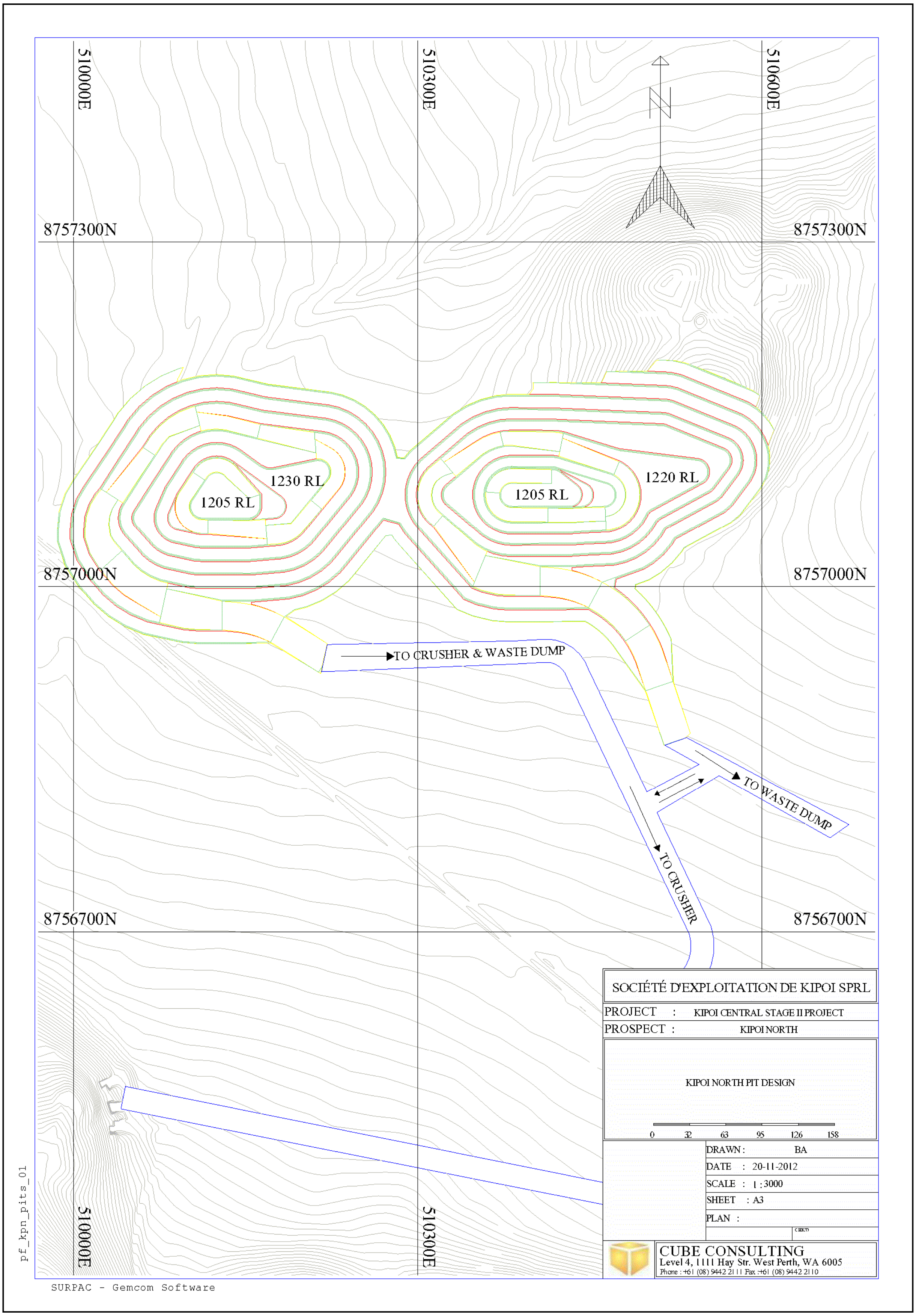

Figure 15-14 Kipoi North Final Pit Design

15.9 OPEN PIT DESIGN TO OPTIMISATION COMPARISON

A measure of the efficiency of the open pit optimisation and detailed design processes was undertaken by reporting ore and waste tonnes within the pit designs and comparing these back to the optimisation shells on which the designs were based. This comparison is shown in Table 15.10 where it can be seen that the designs achieved almost all of the targeted ore at virtually the same copper grade. An additional 3.1% of waste was included in the pit designs, which is considered to be very acceptable in converting a theoretical pit shell into a detailed design.

Area	Detail	Shell (number)	Ore tonnes (t)	Grade Cu (%)	Contained Cu (Cu.t)	Waste Tonnes (t)	Strip Ratio (w:o)	Total Tonnes (t)
Kipoi Central	Optimisation Shell	17	15,578,934	1.22	190,063	48,825,916	3.1	64,404,850
	Pit Design		15,479,818	1.20	186,326	51,457,781	3.3	66,937,599
	Variance (%)		**-0.6%**	**-1.4%**	**-2.0%**	**5.1%**	**5.7%**	**3.8%**
Kipoi North	Optimisation Shell	17	1,211,086	1.98	23,980	5,740,402	4.7	6,951,488
	Pit Design		1,230,667	1.94	23,902	5,037,484	4.1	6,268,151
	Variance (%)		**1.6%**	**-1.9%**	**-0.3%**	**-14.0%**	**-15.8%**	**-10.9%**
Kileba	Optimisation Shell	19	5,233,596	1.87	97,868	10,151,337	1.9	15,384,933
	Pit Design		5,233,794	1.87	97,773	10,278,586	2.0	15,512,380
	Variance (%)		**0.0%**	**-0.1%**	**-0.1%**	**1.2%**	**1.2%**	**0.8%**
Total	Optimisation Shell		22,023,616	1.42	311,911	64,717,655	2.9	86,741,271
	Pit Design		21,944,279	1.40	308,001	66,773,851	3.0	88,718,130
	Variance (%)		**-0.4%**	**-0.9%**	**-1.3%**	**3.1%**	**3.4%**	**2.2%**

Table 15.10 Pit Design Comparison to Targeted Optimisation Shells

15.10 WASTE DUMP DESIGN

Based on the generated pit designs, the estimated waste volume to be mined is approximately 30.5Mbcm and all of the generated pit waste will be dumped in designated dumps closer to the pits. Waste dump designs have been created for Kipoi Central Pit, Kileba and Kipoi North Pit based on the following design criteria

- 10m Bench heights
- 17degrees batter slopes
- 10m Berm width
- 30m ramp width at a 1 in 10 gradient
- Vertical design height target of 30m (above general topography level)

The overall slope angle (crest-to-crest) is 13.2 degrees for all dumps. To calculate the actual dump capacities required a material swell factor of 30% was applied on all waste from the pit in order to achieve a near compacted volume. No allowance for any in-pit backfilling has been made; however this is an option that can be further explored for the Kipoi North pits and the Kipoi Central satellite pit.

With the exception of the Kipoi Central waste dump, all other waste dumps have been designed with a minimum 100m standoff from the crest/limits of the respective pits.

The Kipoi Central waste dump (Figure 15-15) is a south extension of the original and existing Kipoi Central waste dump and has been modified to accommodate the additional waste from Stages 2A and 2B.

The Kileba waste dump (Figure 15-16) is north-east of the Kileba pit and has a capacity of approximately 3.7Mbcm

The Kipoi North waste dump (Figure 15-17) is envisaged to be constructed over the existing TSF facility after the decommissioning of the HMS plant and has a capacity of approximately 6.9Mbcm.

The proposed site infrastructure layout is shown in Figure 15-18.

Table 15.11 below summarises waste from pit and their respective waste dump capacities. The Kipoi Central dump capacity includes approximately 8.1Mlcm of waste material to be mined from the Kipoi Central Stage 1 pit.

Pit	Mined Waste (LOM) BCM	Mined Waste (LOM) LCM	Waste Dump Capacity m3
Kipoi Central Stage 1 & 2	28,961,556	37,650,023	37,893,534
Kipoi North	2,661,843	3,460,396	3,792,653
Kileba	5,225,667	6,793,367	6,823,402
Total	**36,849,066**	**47,903,786**	**48,509,589**

Table 15.11 Waste Dump Capacities and In-situ Waste Mined From Open Pits

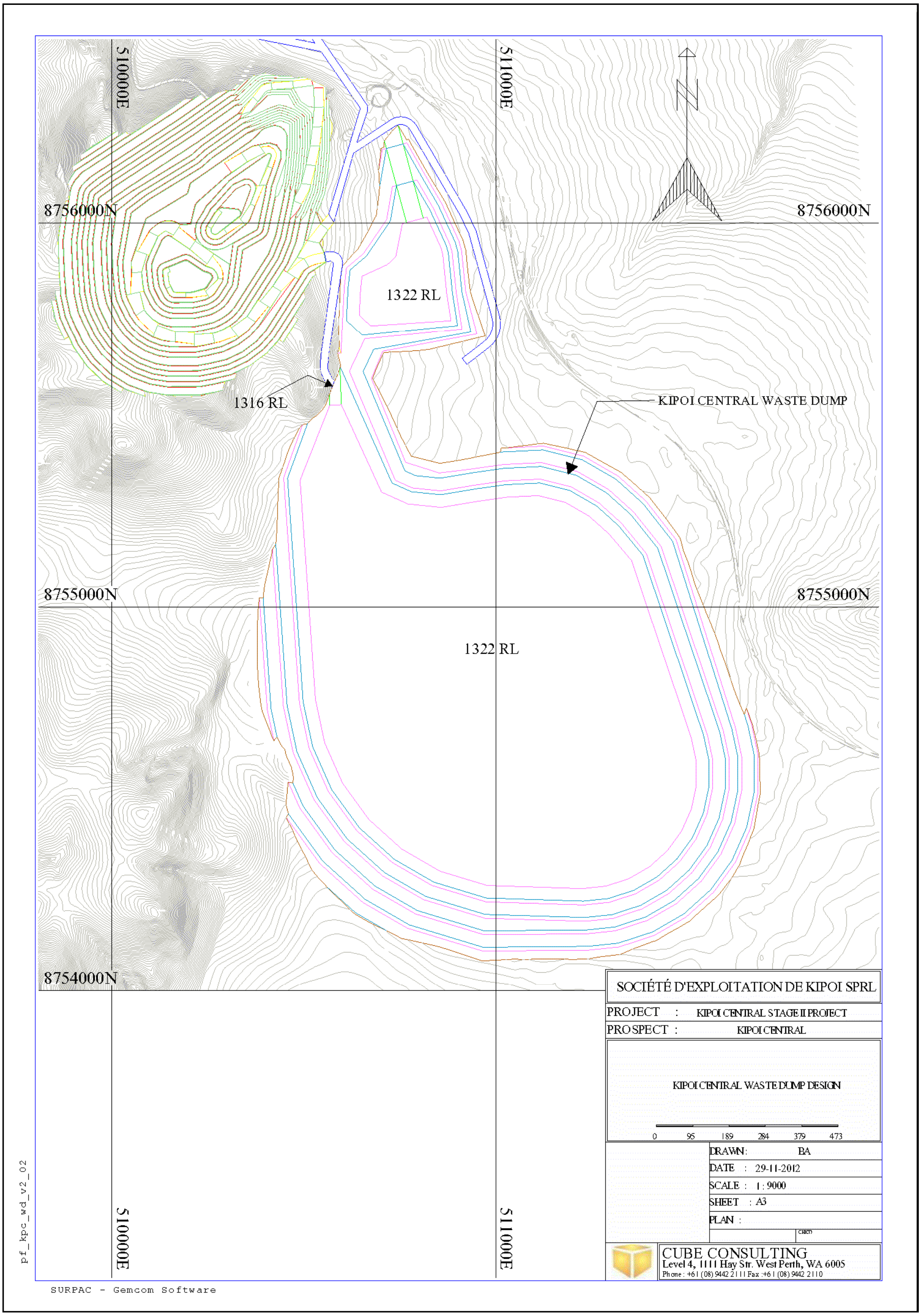

Figure 15-15 Kipoi Central Waste Dump Design

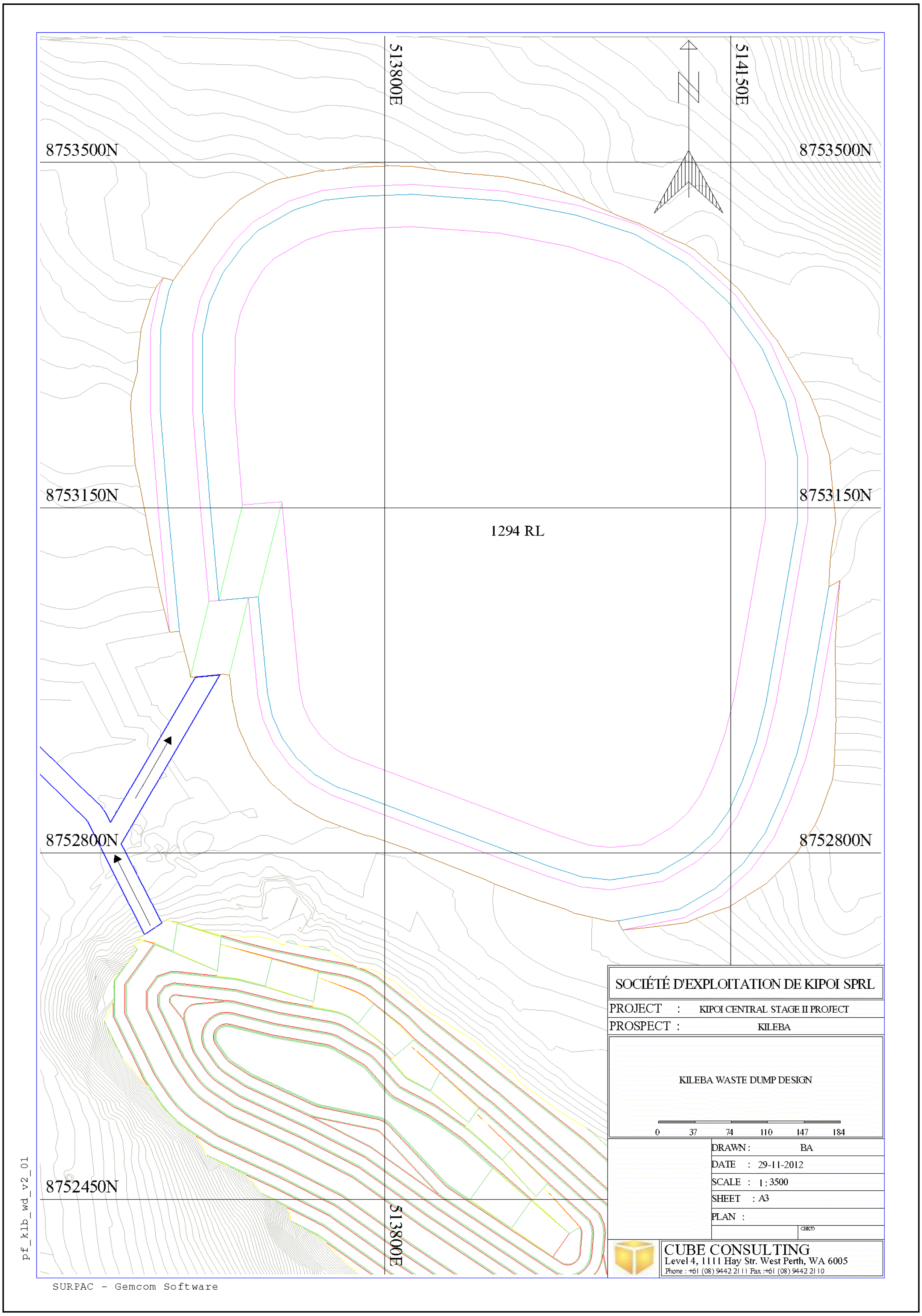

Figure 15-16 Kileba Waste Dump Design

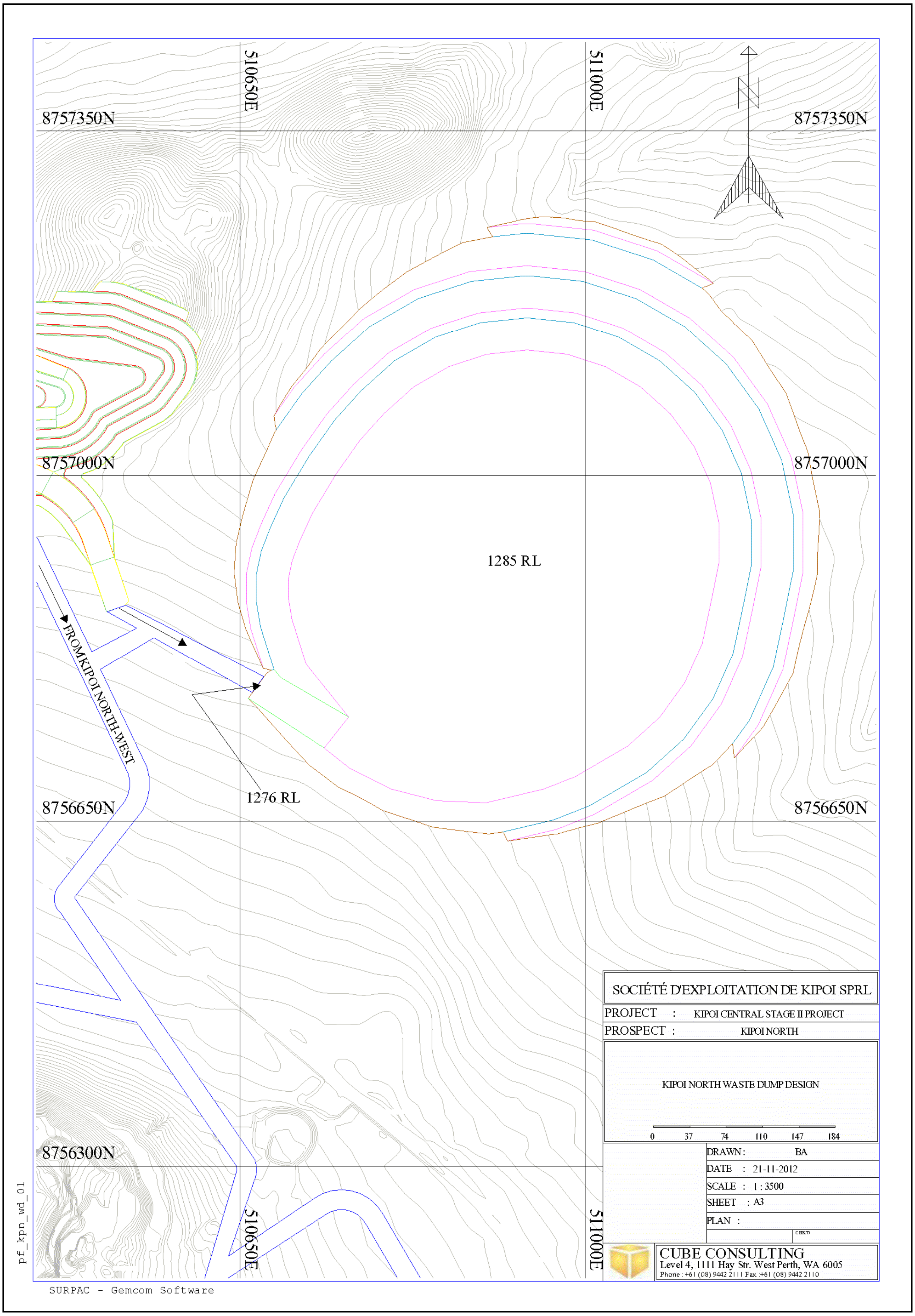

Figure 15-17 Kipoi North Waste Dump Design

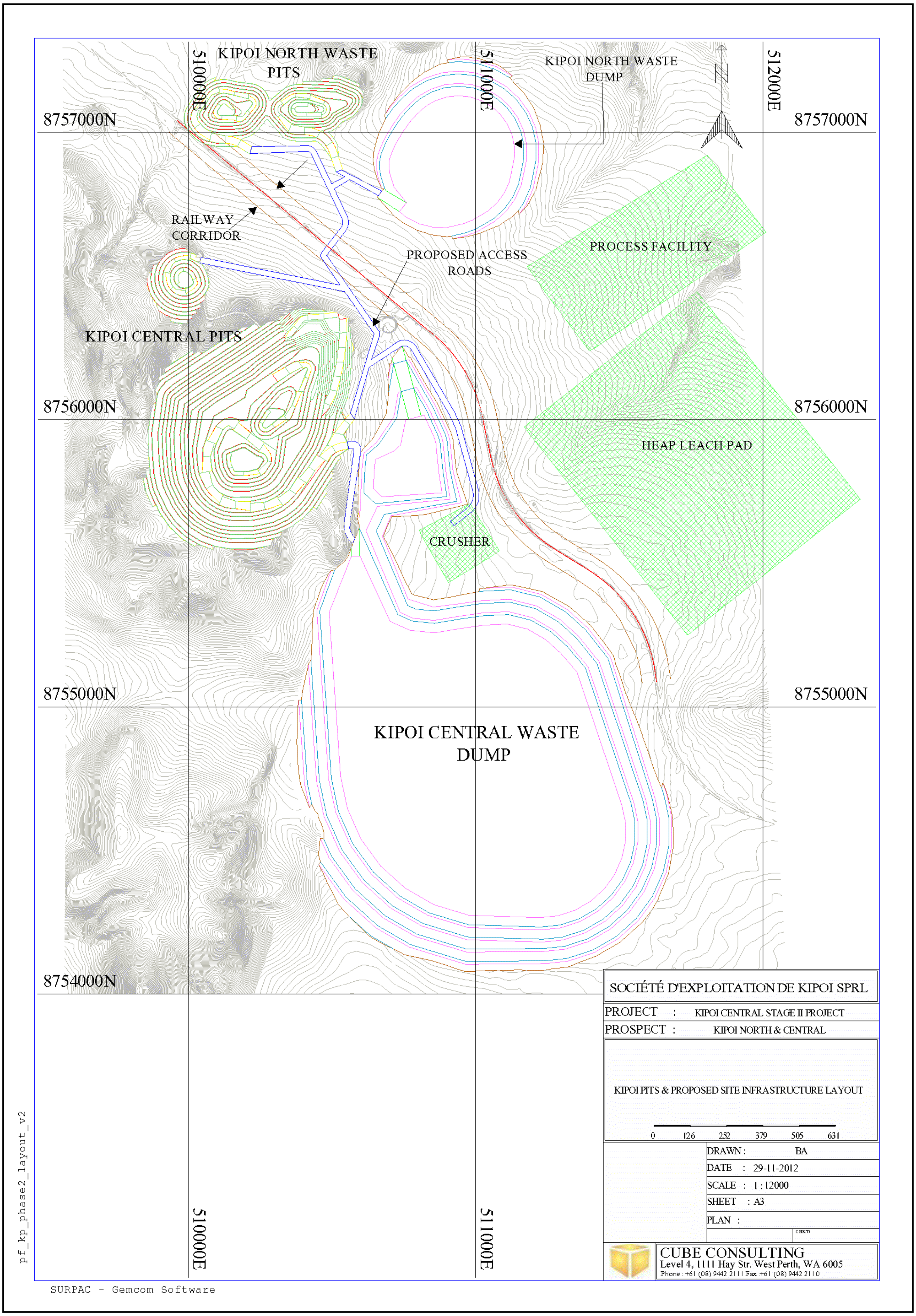

Figure 15-18 Proposed Site Infrastructure Layout

15.11 SUMMARY OF MINERAL RESERVES INCREASE

Since all of the pits included in this study are additional to the current Stage 1 mine plan and associated Mineral Reserves, the Mineral Reserves of the Kipoi project are increased by the Mineral Reserves in this Stage 2 development. Table 15.12 shows a summary of these estimated Mineral Reserves.

Classification	Unit	Total
Proven	BCM	7,067
	t	16,014
	Cu%	2.13
	Cu t	341
Probable	BCM	10,348,507
	t	21,928,265
	Cu%	1.40
	Cu t	307,659
Total	BCM	10,355,574
	t	21,944,279
	Cu%	1.40
	Cu t	308,001

Table 15.12 Kipoi Stage 2 Mineral Reserves Estimate

These Mineral Reserves are reported above economical %Cu cut-off grades which vary by material according to the respective modifying factors. A summary of the cut-off grades are shown in Table 15.13 with a corresponding detailed breakdown of this material by pit stage and material shown in Table 16.1

The cut-off grades varied by material and deposit according to varied metallurgical recoveries and treatment costs and were calculated as a break-even, non-mining basis and shown in Table 15.13 with the resultant pit inventories shown in Table 16.1

Deposit	Material	Cut-off (% Cu)
Kipoi Central	Pit 1 C1 (Oxide)	0.4
	Pit 2 C2 (Oxide)	0.34
	C3 (Transition)	0.7
	Fresh/Sulphide*	1.0
Kipoi North	C1 (Domain 1, Oxide)	1.0
	C2 (Domain 2&4, Oxide)	0.7
	Transition	1.2
Kileba	C1 (Domain 1, Oxide)	0.9
	C2 (Domain 2, Oxide)	0.6
	Transition	1.2

Table 15.13 Breakeven Cut-off Grades

***Fresh/Sulphide material not included in this estimate**

Note that these numbers only represent the increase in Mineral Reserves resulting from the designs open pits in Stage 2 of the project and as such this is not intended to be representative of the total Kipoi project Mineral Reserves.

The Mineral Resources from which these Mineral Reserves have been derived are inclusive of these stated Mineral Reserves.

The extent to which the mineral reserve estimated here could be materially affected by mining, metallurgical and other factors such as metals prices received are best indicated by observation of the open pit optimisation analyses as shown in Section 15.2 which shows potential pit size and inventory variances generated by varied ranges of metal prices received. Here it can be seen that the pit size selected for the significant majority of the reserves occurs on an extended flat portion of the value curve which is a good indication of the robustness of the selected shells and in turn the Mineral Reserves themselves.

Cube are not aware of any factors associated with environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the Mineral Resource Estimates at the Kipoi Copper Project.

16.0 MINING METHODS

16.1 Summary of Geotechnical Assessments for Wall Design Parameters

Ground conditions influencing future wall stability and excavation requirements at the planned approximately 180m deep Kipoi Central Stage 2 Pit, approximately 120m deep Kileba Pit and the approximately 100m deep Kipoi North Pit were interpreted from the cores of 14 geotechnical boreholes, structural geological data collected from the existing Kipoi Central Stage 1B Pit, and results of unconfined compressive strength tests carried out on cores.

Mining at Kipoi Central and Kileba will take place in siltstones, dolomitic siltstone and volcaniclastic units of the Mwashya Series of the Roan Sub-group. At Kipoi Central rocks dip steeply (at around 70o) to the south south-east and are unconformably overlain in the southern sector by tillite of the Nguba Group. At Kileba, volcanoclastics and sediments dip steeply to subvertically to the south west. The Kipoi North deposit will be mined in a moderate south dipping sequence of siltstone and dolomites of the Lower Mine Series.

Faulting, along with bedding and jointing is well developed at the deposits.

Rock weathering depth profiles are variable, with mixed highly weathered (oxidised) and moderately weathered (transitional) rocks interpreted to occur to the full depth of proposed mining at Kipoi Central and Kileba. An apparently complex rock weathering profile occurs at Kipoi North, with the top of fresh rock occurring at depths of around 80m in the west and 20m in the east. Cavities (which are sand-filled in places) occur in dolomitic rocks at all the deposits.

While inferred to be below future pit mining elevations, little information is available on the depth of the pre-mining groundwater table; perched water tables are however expected to occur.

Ground conditions are assessed as ranging locally from "very poor" to "fair" within the mixed highly weathered and moderately weathered rocks at Kipoi Central and Kileba. Weathered rocks at Kipoi North are interpreted as being of a "poor" quality, with underlying fresh rocks (where these occur) being of a "good" to "very good" quality.

Future wall stability is expected to be governed by the presence, orientation and shear strengths of geological structures present in rocks of all weathering grades. Some potential for rock mass (rotational) failure exists within the deeply weathered rocks at Kipoi Central and Kileba should pit walls be mined at too steep an angle for the prevailing ground conditions.

Results obtained from blocky rock mass stability modelling and two dimensional stability analyses against potential rotational wall failure were used in deriving the "base case" wall design parameters for the deposits. Experience with wall stability in the Kipoi Central Stage 1B Pit, along with pits mined in similar ground conditions elsewhere was also taken into account in the preparation of wall design parameters.

"Base case" wall design parameters recommended for the deposits comprise 10m vertical height benches, mined at face angles of 80o, separated by 8m, 10m and 12m wide berms. Wider (20m wide) berms located at around 50m vertical intervals are recommended at the Kipoi Central Stage 2 and Kileba Pits.

Excavation requirements are expected to require both "blasting to loosen" and "blasting to fracture". Difficult blasting conditions are anticipated, being influenced by the presence of core stones, local variations in rock strength (as a result of changes in lithology and rock weathering grade), and presence of cavities in dolomitic rocks.

Additional geotechnical drilling investigations need to be carried out at the Kipoi Central and Kipoi North deposits respectively to confirm current interpretations of rock weathering depths influencing the pit design parameters and to gain a better understanding of the variation in the rock weathering profile. These can be carried out during the early part of mining the Stage 2A Pit at Kipoi Central, and following a decision to proceed with mining at Kipoi North. Pit wall mapping and wall stability monitoring will need to be carried out during mining at all the deposits. Results obtained will be used to subdivide pit walls into design sectors and to confirm or amend, as necessary, the current geotechnical interpretations and design parameters.

Following the completion of the detailed pit designs, the designs were evaluated by the geotechnical consultant and were found to comply with the recommended pit wall design parameters.

16.2 PRODUCTION SCHEDULE

Following the completion of the staged pit designs, mining inventories were calculated to be used in the preparation of the mining production schedule. The pit inventories were reported by deposit, pit stage, material oxidation for ore, and waste. The resultant pit inventories shown in Table 16.1

		UNIT	Kipoi Central			Kileba	Kipoi North		Total
			2a	2b	2c (Sat)	Final	West	East	
Oxide1	Measured	BCM	0	0	0	0	0	0	0
		t	0	0	0	0	0	0	0
		Cu%	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Cu t	0	0	0	0	0	0	0
	Indicated	BCM	0	0	0	225,768	209,004	229,067	663,839
		t	0	0	0	428,955	415,083	468,685	1,312,723
		Cu%	0.000	0.000	0.000	2.407	2.016	2.070	2.163
		Cu t	0	0	0	10,325	8,368	9,703	28,396
Oxide2	Measured	BCM	3,377	0	0	0	0	0	3,377
		t	6,793	0	0	0	0	0	6,793
		Cu%	1.910	0.000	0.000	0.000	0.000	0.000	1.910
		Cu t	130	0	0	0	0	0	130
	Indicated	BCM	3,502,447	2,211,445	241,379	2,134,816	55,127	113,066	8,258,280
		t	7,317,869	4,863,653	483,823	4,056,143	112,634	230,928	17,065,050
		Cu%	1.123	0.930	0.874	1.639	2.035	1.499	1.195
		Cu t	82,163	45,242	4,230	66,494	2,292	3,462	203,884
Transition	Measured	BCM	3,690	0	0	0	0	0	3,690
		t	9,221	0	0	0	0	0	9,221
		Cu%	2.295	0.000	0.000	0.000	0.000	0.000	2.295
		Cu t	212	0	0	0	0	0	212
	Indicated	BCM	616,633	492,816	0	315,625	0	1,314	1,426,388
		t	1,554,667	1,243,792	0	748,696	0	3,337	3,550,492
		Cu%	2.323	1.466	0.000	2.799	0.000	2.300	2.123
		Cu t	36,118	18,231	0	20,954	0	77	75,379
Waste	Waste Oxide	t	24,367,135	18,666,853	1,795,692	8,863,234	2,260,898	2,707,233	58,661,045
	Waste Trans	t	1,462,342	1,962,132	0	1,225,740	31,882	36,659	4,718,755
	Waste Fresh	t	2,356,953	846,674	0	189,612	812	0	3,394,051
	Total W Tonnes	t	28,186,430	21,475,659	1,795,692	10,278,586	2,293,592	2,743,892	66,773,851
Waste	Waste Oxide	BCM	11,365,276	8,630,397	801,889	4,664,225	1,218,324	1,415,825	28,095,936
	Waste Trans	BCM	499,641	761,137	0	513,660	12,752	14,629	1,801,819
	Waste Fresh	BCM	316,389	204,821	0	47,782	313	0	569,305
	Total W BCM	BCM	12,181,306	9,596,355	801,889	5,225,667	1,231,389	1,430,454	30,467,060

Table 16.1 Pit Inventories by Deposit and Stage

16.3 SCHEDULE METHODOLOGY, TARGETS AND CONSTRAINTS

The primary aim of the mining production schedule is to provide ore material to the process facility to achieve prescribed copper production rates. The production from the open pit is initially supplementary to processing of existing material from the Stage 1 DMS process and targeted copper metal production from the stage 2 pits were supplied which was the main driver for the schedule. These targets are described in Table 16.2

Schedule Period	Target Cu tonnes
2016 Q1	2,289
2016 Q2	2,289
2016 Q3	3,060
2016 Q4	6,313
2017 Q1	8,863
2017 Q2	8,863
2017 Q3	8,863
2017 Q4	8,863
2018 Q1	8,863
2018 Q2	8,863
2018 Q3	9,186
2018 Q4	12,500
2019 H1	25,000
2019 H2	25,000
2020	50,000
2021	50,000
2022	25,000

Table 16.2 Production Schedule Cu Metal Produced Targets

As can be seen from the above table, the Stage 2 open pits are required to deliver a steadily ramping up supply of copper to the plant, starting with 14 kt in 2012, 35 kt in 2017, 39kt in 2018 and then 50kt for the next 3 years with the last year of production tapering down as the project reached its final stages. These metal production targets were to be achieved within a defined throughput constraint of 4.5 Mtpa ore feed.

A secondary target is to supply the best value material first to maximise the value to the project. In order to achieve this, each of the eight individual stages was ranked side by side on a bench by bench basis. In that way the highest value stages were identified for first development.

For practical mining considerations, a maximum vertical advance rate of 60m per annum was adhered to throughout the schedule. This limit is in line with similar operations where a degree of selective mining takes place together with a comprehensive grade control programmes to delineate the ore. It is notable however that this constraint did not have any significant impact on the schedule.

Further practical considerations included attempts to smooth total production to facilitate efficient use of equipment and limiting of total stages mined at any one time to limit fleet movements.

Throughout the study, all material classified as inferred resources as well as all fresh material has been considered to be waste and has been treated as such tin the scheduling process.

The schedule has been broken down into quarters for the first three years, followed by two half years for the fourth year and annually thereafter.

16.4 SCHEDULE RESULTS

Using the above targets and constraints, a practical mining production schedule was developed. The schedule commences with 10.4 Mt of material mined within the first year (2016), which ramps up to a maximum of 18 Mtpa in 2017 and 2018 after which the total material mined slowly tapers down as the pits reach their final, deeper stages.

The first production is from the Kipoi Central Stage 2a (KPC2a) pit which is basically a stand-alone cutback to the existing Stage 1b pit, and the Kileba (Kil) pit which is a single stage pit development of the Kileba deposit approximately 5km south-east of the Kipoi Central deposits. Production in the Kipoi Central Stage 2b (KPC2b) pit commences in the first quarter of 2017 with all production coming from these three areas until the second half of 2019 when the Kileba pit comes to an end and the small Kipoi Central Stage 2 Satellite pit (KPC2c) commences.. The two Kipoi North pits, east and west (KPN E and KPN W) commence in 2021 and supply the majority of the ore feed in the final two years of the schedule. Figure 16-1 and Figure 16-2 provide graphical representations of the schedule progression.

Mining costs associated with this schedule were calculated using the mining unit rates as listed in Section 15.3.2 and output by schedule period for inclusion in the study financial model.

Ore and Waste Mining – Life of Mine Annual is shown in Figure 16-3 and Ore Feed Tonnes and Grade Cu – Life of Mine Annual and 3 Years Quarterly Detail is shown in Figure 16-4 and Figure 16-5 respectively.

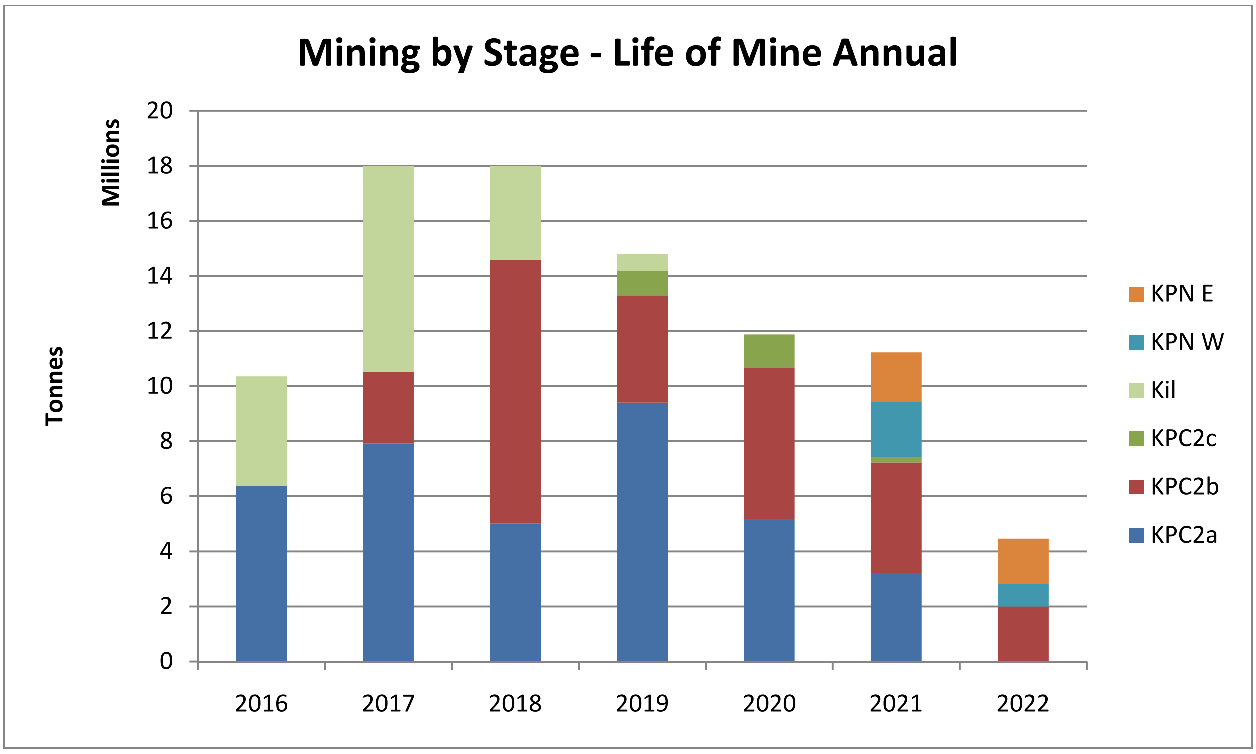

Figure 16-1 Mining by Stage – Life of Mine Annual

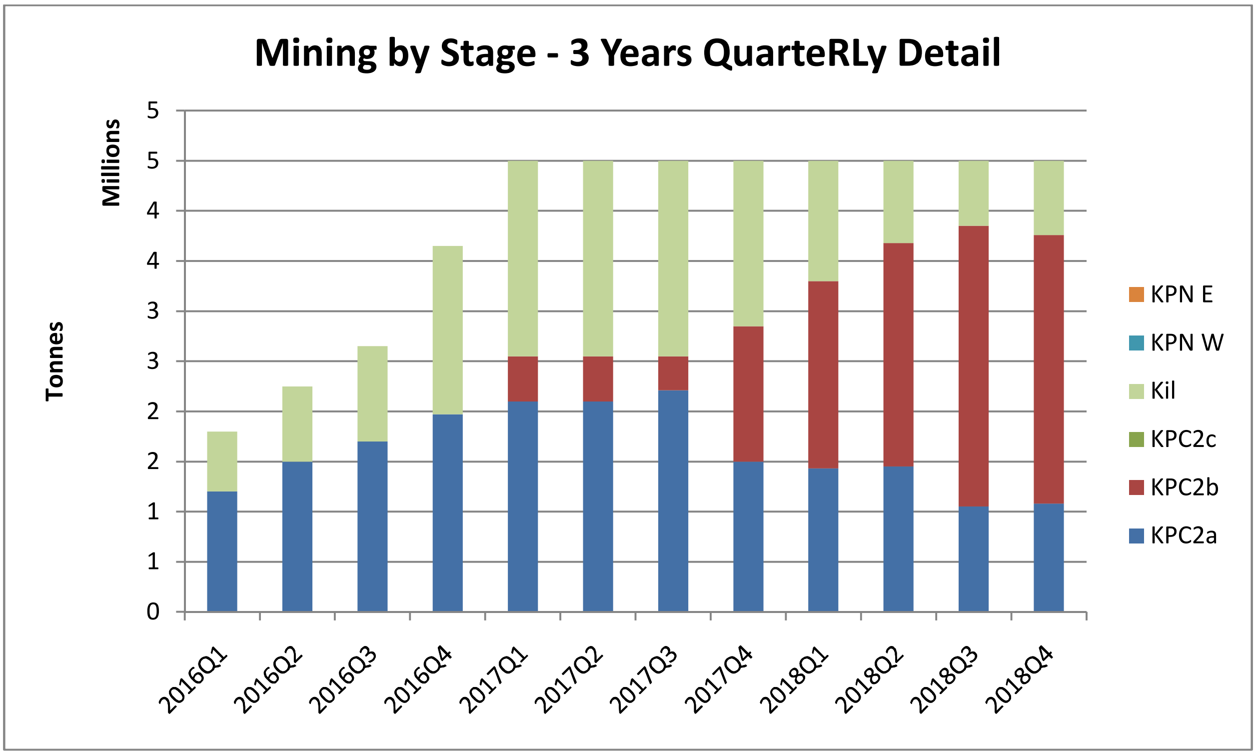

Figure 16-2 Mining by Stage – 3 Years Quarterly Detail

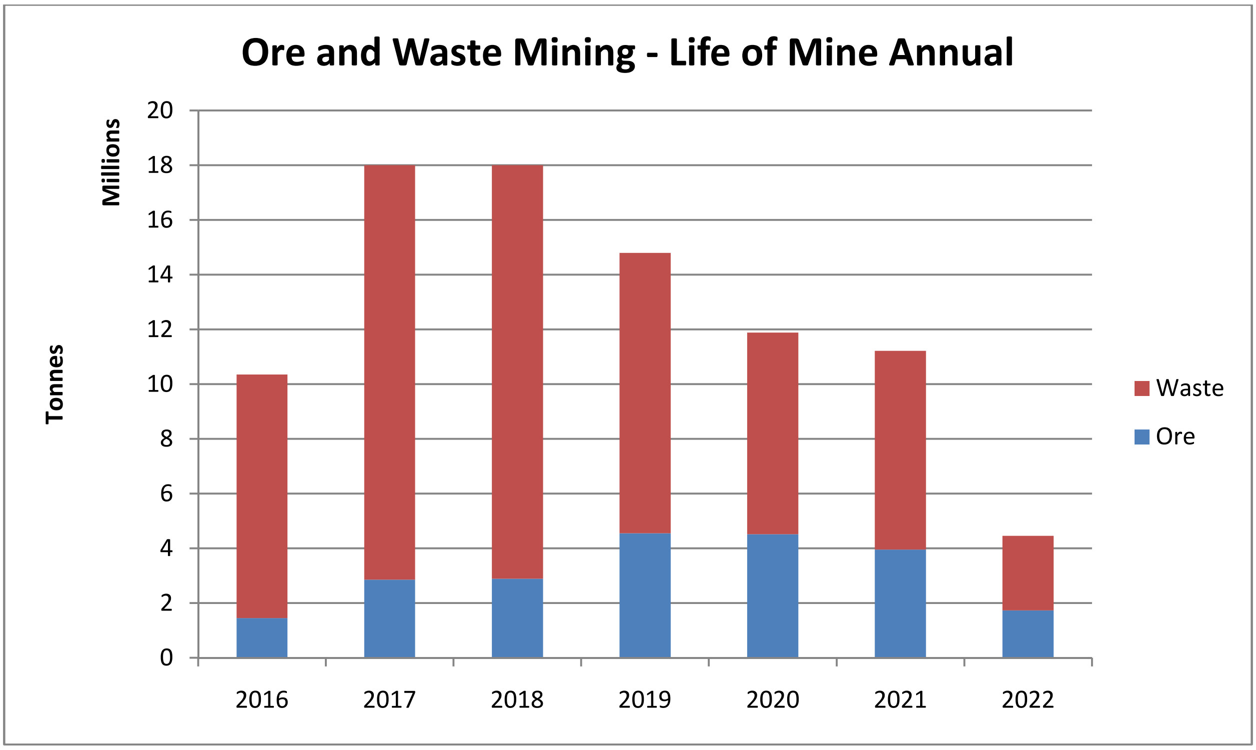

Figure 16-3 Ore and Waste Mining – Life of Mine Annual

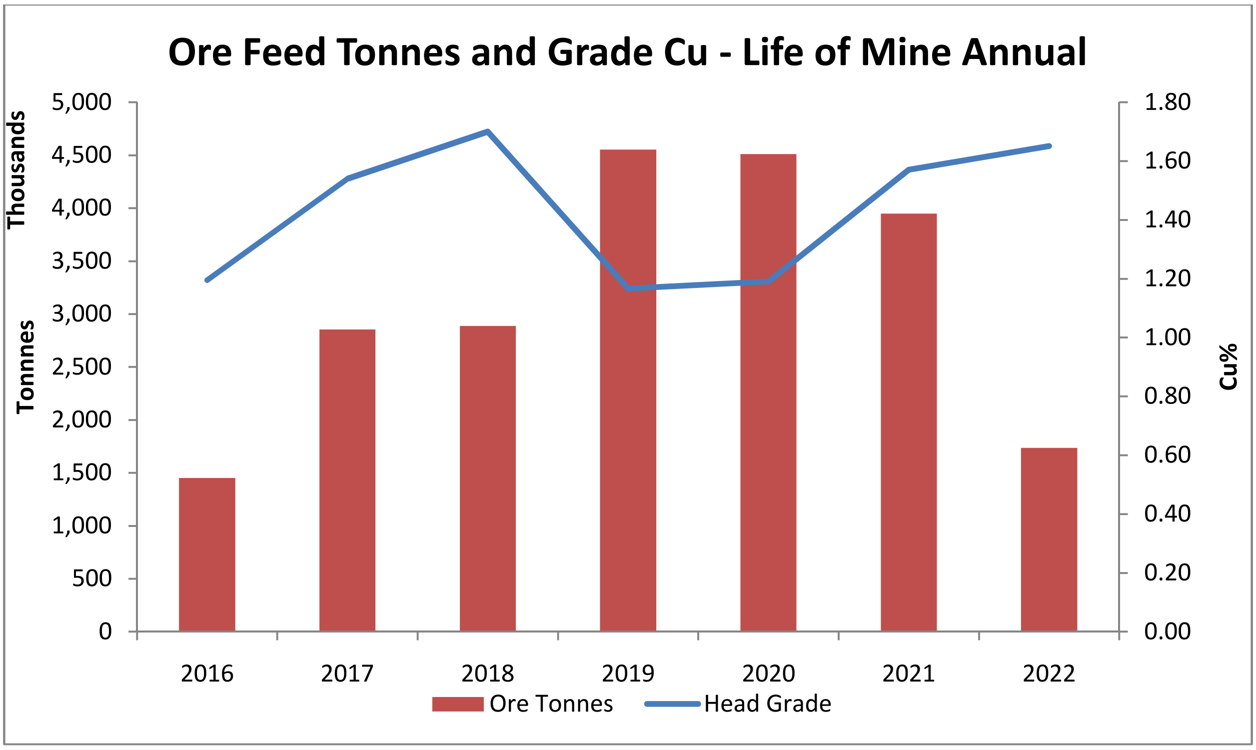

Figure 16-4 Ore Feed Tonnes and Grade Cu – Life of Mine Annual

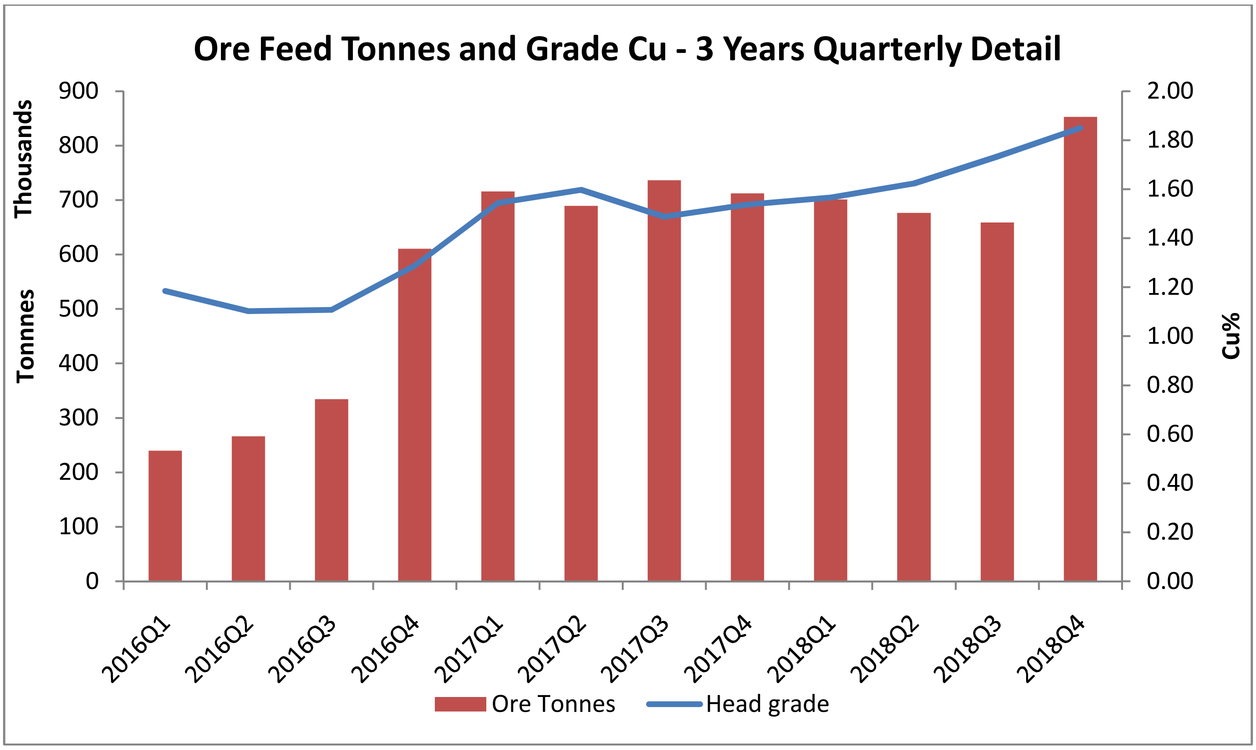

Figure 16-5 Ore Feed Tonnes and Grade Cu – 3 Years Quarterly Detail

16.5 FINAL CONFIRMATION OPTIMISATION

As is often the case in studies of this nature, key study parameters are revised as final results and analyses are completed, resulting in revisions of the parameters which become apparent towards the end of the study. This leads to the iterative nature of the planning process whereby evaluations are carried out as the parameters are refined.

Following the conclusion of the mine planning process which included open pit optimisations to define the open pit sizes, detailed mine designs according to the prescribed geotechnical design parameters and finally the production schedule to achieve the planned product output, revisions to parameters were identified. The most relevant parameter change being revisions to the metallurgical recoveries. A comparison of these recovery changes are shown in Table 16.3

Material	Study Paramaters	Revised Final
Kipoi Central		
- C1 Ore	90.6%	87.0%
- C2 Ore	89.9%	85.7%
- C3 Ore	86.7%	77.8%
Kipoi North		
- C1 Ore	70.6%	73.3%
- C2 Ore	88.5%	89.0%
- C3 Ore	83.0%	83.5%
Kileba		
- C1 Ore	83.9%	74.4%
- C2 Ore	84.2%	80.5%
- C3 Ore	83.0%	75.4%

Table 16.3 Revised Metallurgical Recoveries

A further revision, although relatively negligible, was made to the allocation of grade control costs whereby a previously omitted $0.545/t of ore feed material is now included in the ore costs.

In order to quantify the impact of these changes on the project, specifically to the size of the selected open pits, the pit optimisation process was repeated incorporating these changes and the results compared to the actual previously selected pit shells. Figure 16-6 to Figure 16-8 show the graphed results of these optimisations for Kipoi Central, Kileba and Kipoi North respectively. As a means of displaying the comparative impact of the revised parameters, points on each of the graphs have been highlighted to show where this study's actual selected pits (by pit size) are located relative to the revised optimisations.

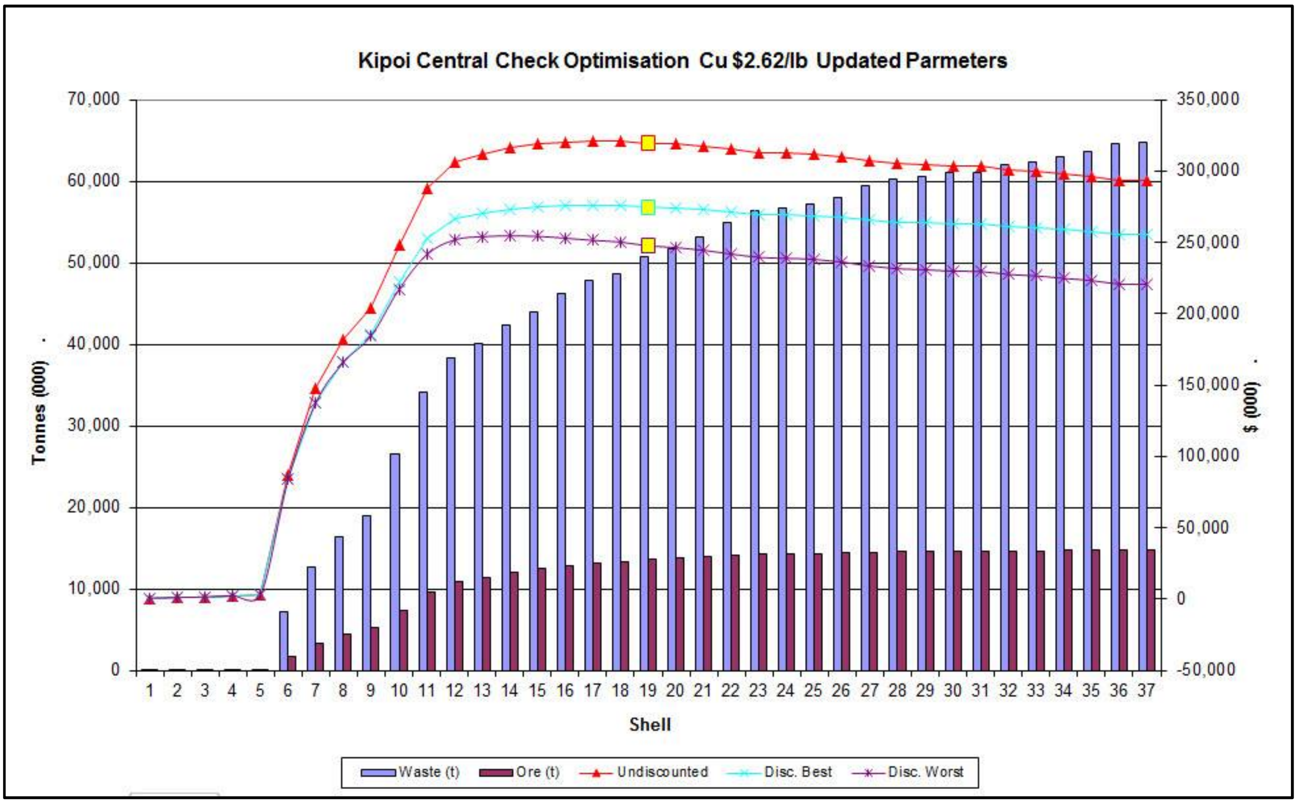

Figure 16-6 Kipoi Central Check Optimisation using Revised Parameters

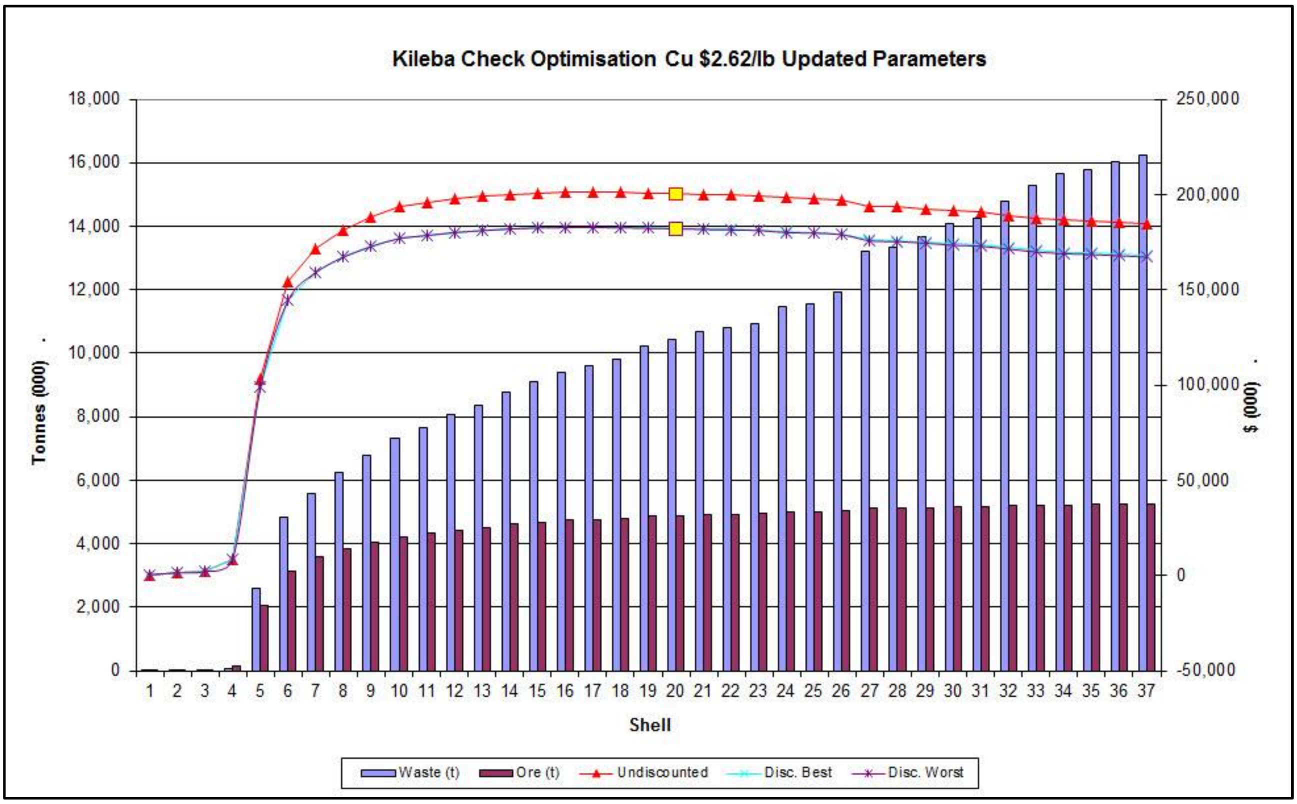

Figure 16-7 Kileba Check Optimisation using Revised Parameters

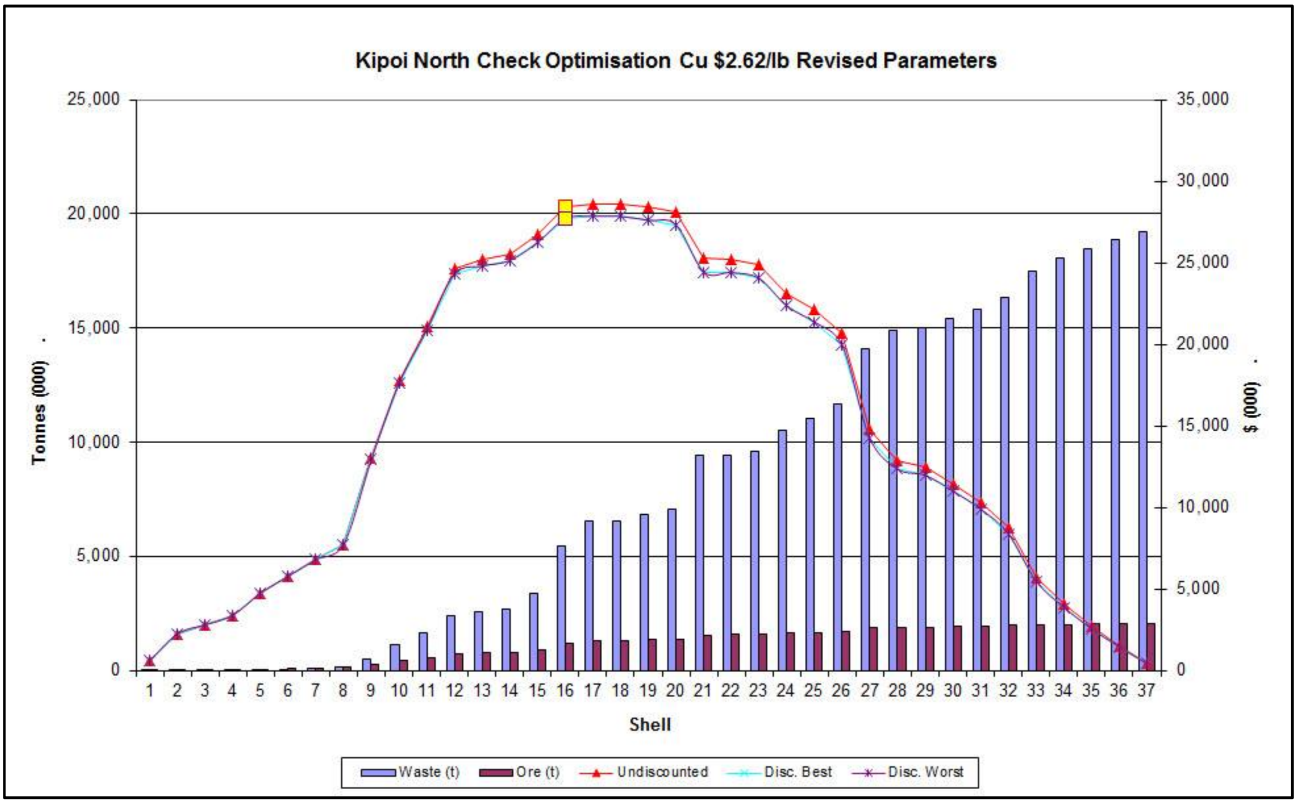

Figure 16-8 Kipoi North Check Optimisation using Revised Parameters

As can be seen by the highlighted locations on each of the above graphs, the current selected shells which were used for guiding the detailed pit designs in this study are still appropriate which in itself is a reflection of the robustness of the open pits. Seen in the context of changing parameters and revenue assumptions it is reasonable to accept that the change in parameters do not represent a material change in the pit designs and as such at this stage it is not advised that the designs require adjusting.

A further impact of the revised parameters is that they result in slight changes to calculated economic cut-off grades. This impact was also measured using the revised parameters and resulted in less than 3% decrease of contained copper due to higher calculated cut-off grades. This too, when considered in the context of variability of all the parameters, is not considered material in the evaluation of the project, especially when considering that base evaluations are being calculated at revenue pricing higher than those used in these optimisations and cut-off calculations.

16.6 MINING EQUIPMENT AND METHOD

The Kipoi Stage 2 project will involve conventional open pit, selective mining, employing the existing mining contractor fleet configuration which is currently mining the Stage 1 of the Kipoi Project, and subsequently supplemented as required by additions to the fleet as mining progresses.

Ore and waste will be mined utilising 65-85t size hydraulic excavators in a backhoe configuration, nominally on 2 x 2.5m flitches and articulated haul trucks with payload capacity of approximately 40t. The excavator/truck fleet match-up is sufficient to meet the production schedule as confirmed by the existing and on-going Kipoi Stage 1 operation. The project scale and selectivity is similar to the Stage 1 project the performance of which confirms the suitability of this decision.

Mining operations will excavate and load the ore and waste in accordance with the marked ore and waste boundaries by adherence to the current grade control practice.

Drilling and blasting will be undertaken on 5m high benches using a Pantera 1500 hydraulic, self-propelled, crawler based surface drilling rig. Drilling patterns will vary based on material weathering and classification. The overlying topsoil layer in each pit will be removed separately and will not require blasting.

Ore zones will be blasted on 5m benches using a drill pattern (burden x spacing) of 3.5m x 4.0m for a typically 0.35 kg/m^3 powder factor. Similarly, waste in all pits will be blasted on 5m benches using a drilling pattern of 4.0m x 4.5m for a powder factor of typically 0.30 kg/m3. The patterns have been selected to give reasonable fragmentation and meet required feed size at the crusher in respect of the ore, and to aid excavator productivity, while keeping the powder factor at minimum.

Ancillary mining activities such as haul road maintenance and construction, ROM Pad works, dust suppression; drainage construction, waste dump maintenance will be performed by a fleet of auxiliary equipment including track dozers, wheeled front-end loaders, wheeled-graders and water carts, once again in line with the currently employed practices of the Stage 1 operations.

16.7 RECOMMENDATIONS FOR FUTURE WORK

While the project is well advanced, it is suggested that additional work will be required prior to start-up of mining operations of this second stage of the project. The following is a brief list of areas relating to the mine engineering part of the study which would assist in adding value to the project as a whole through the value engineering process:

- Review of crusher and waste dump locations in proximity to the Kipoi Central pit. It is our opinion that further consultation will result in more optimal locating of this infrastructure. This will be coupled with a revision of the mine roads as an integrated solution. The Kipoi Central waste dump design slightly overlaps the current explosives magazine area and this will be addressed as part of this infrastructure review.
- Complete sterilization drilling at the current proposed waste dump areas as well as all around the open pit designs such that waste landforms may be optimised to minimise haul distances.
- Obtain updated mine cost estimates from the existing mining contractor to confirm assumptions that existing costs are applicable. Closer to the time of starting up the mining in 2016, consideration may be given to re-tender the mining contract and/or undertake an evaluation of whether owner operating the mining operation should be considered.
- Geotechnical review of the detailed pit designs was in progress at the conclusion of this study. Follow up and implement any further recommendations resulting from this review.
- Evaluate to what extent additional in-fill drilling will assist in providing more robust production plans.
- Additional deposits exist in the project area which are at various stages of understanding, with the open pit mining of stage 2 only scheduled to commence in 2016, there is an obvious benefit in re-visiting the mine plan as a whole as these new resources are evaluated.
- All of the above suggests that while this study has resulted in a robust mine plan for the Stage 2 development of the project, there is every expectation that additional work will be carried out in the forthcoming two years which will ensure that all technical aspects which may change are incorporated into a fully optimised mine development strategy prior to commencement of the mining of these second stage pits.
- As mentioned in Section 9, the mining production schedule was completing using metallurgical recoveries which were superseded at the conclusion of the study. While these revisions have been shown not to have a material impact on the actual open pit sizes and designs, it is recommended that the production schedule is updated as part of the value engineering stage of the project development prior to the commencement of mining.

17.0 RECOVERY METHODS

17.1 Stage 1

Details of Stage 1 processing of the Kipoi Copper Project, as part of a DFS, have previously been reported in the CSA NI43-101 Technical Report dated October 2008 and CSA NI43-101 Technical Report dated May 2009. Stage 1 comprises the development of the Kipoi Central open cut mine, processing facility, material storage facility and associated infrastructure. The Stage 1 plant will treat 900,000 tpa of high grade Kipoi Central oxide and transition ores (+3.25% Cu) to produce approximately 117,800 tonnes of +25% copper concentrate by crushing, ore washing, gravity spirals and heavy media separation (HMS) over a period of just over three years. The Kipoi Copper Project Stage 1 HMS is in operation.

The Stage 1 plant is planned to be superseded by the Stage 2 SXEW Plant, which will produce LME Grade A quality copper cathode directly at the mine-site, in mid-2014. The Stage 2 operations will initially process residues from the HMS plant, containing approximately 4.8Mt at 3% Cu, which provides immediate feedstock to Stage 2 operations so that the mining schedule does not need to recommence until 2016.

17.2 DFS Stage 2

This section has been extracted from the executive summary in the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012.. Sources of information and diagrams have not been referenced individually.

As detailed in Section 6.6, Process Facilities Description, the Kipoi process plant will be developed in three phases to facilitate the initial processing of stockpiled materials from the existing HMS plant, followed by later processing of ROM ore. This section describes the flowsheet development and equipment selection on a unit operation basis.

Flowsheet selection for the Kipoi Copper Project - Stage II involved an initial review of the Scoping Study flowsheet and a subsequent reduction in equipment in some unit operations on the basis of reducing capital whilst maintaining the production capacity of the circuit. Unit operations that changed significantly during the design review included CCD and SX. Case studies using Metsim modelling were conducted to evaluate the benefits of these changes.

Testwork conducted at Mintek in South Africa provided data for ore characteristics, scrubbing and particle size distribution and leaching of ore via both agitated leaching and heap leaching. Testwork associated with the processes of Solvent Extraction and Electrowinning was not carried out during the DFS. Modelling of the SX circuit and subsequent validation of the process design was carried out using vendor software. The accuracy of the modelling software is such that model outputs generally replicate actual plant results within ±1 – 2%. Solvent extraction and electrowinning testwork is not generally carried out due to the relatively standard nature of the process and well understood design parameters. The results of the testwork are discussed in this section in the context of their significance to the plant design, whilst detailed testwork data is presented in Section 13.2.

17.2.1 Area 10 - Crushing

The crushing area comprises a ROM bin, Apron Feeder, Rolls Crusher for primary crushing and a cone crusher for secondary crushing. Selection of this style of flowsheet is common to many of the DRC operations, due largely to the suitability of the Rolls Crushers for processing oxide ores with some clay component and, at times, elevated moisture levels. Rolls Crushers, often referred to as mineral sizers, are well suited to processing less competent ores with an abrasion index less than 0.15 as material with a low abrasion index results in low wear rates on the Rolls Crusher teeth. Data from the DFS testwork shows an abrasion index for Kipoi ore of 0.047 to 0.067, with Kileba and Kipoi North in the range 0.15 – 0.29.

Classification and fines separation is achieved using a scrubber, with cyclones used for classification of scrubber fines discharge. The Scrubber was selected on the basis of the fines and clay component in the Kipoi ores and the unit facilitates removal of fines that would be problematic to the process of heap leaching. Material in the size range +212 micron to 25 mm is directed to heap leach, whilst minus 212 micron material is treated via a conventional agitated tank leach.

Consistent with the DFS testwork, the Scrubber has been designed for a residence time of up to 60 seconds and operates at a pulp density of 50% solids. Discharge from the 25 mm aperture, single deck screen is directed to the scrubber. Raffinate addition to the scrubber facilitates fines removal whilst maintaining an optimal water balance by negating the use of water. Water is used during Phase 2 to avoid acid being stockpiled with the slimes component.

Coarse, scrubbed ore is directed to agglomeration and heap leaching, after being allowed to drain off free moisture on an interim stockpile, whilst fines from the cyclone overflow is treated via the process of agitated leaching, described below.

17.2.2 Area 20 - Agglomeration & Stacking

Agglomeration has been selected as the most appropriate process for pre-treatment of the heap leach ore as the process renders the ore more amenable to leaching at high rates via partial satisfaction of the gangue acid consumption (GAC). A total GAC in the range of 10 – 40 kg acid per tonne of ore has been demonstrated during testwork on the Kipoi ores. Agglomeration generally aims to satisfy up to 50% of the overall GAC for a particular ore by addition of concentrated sulphuric acid and this principle has been employed for agglomeration of the Kipoi ores.

The agglomeration and stacking circuit has been designed with a capacity of up to 500 tonnes per hour against a nominal treatment rate of approximately 480 wet tonnes per hour. The Agglomerator has dimensions of 9m (L) x 2.7m (D) and will operate at a fill level of 20 – 25% to provide residence time for effective mixing with acid and agglomeration.

17.2.3 Area 30 - Heap Leaching

Heap leaching was selected as an economical process for recovery of copper from Kipoi ores on the basis of extensive testwork comprising bottle rolls, 1 m column testing and 6 m column testing. The 6 m columns represent the design height of each lift for the Kipoi heap leach and as such the testwork results provide a strong correlation with expected results in the field. Leaching data presented in the graph below demonstrates leach cycle times in the region of 90 days and terminal recovery in excess of 90% when solution is applied at 12 g/L acid concentration and 15 L/h/m^2.

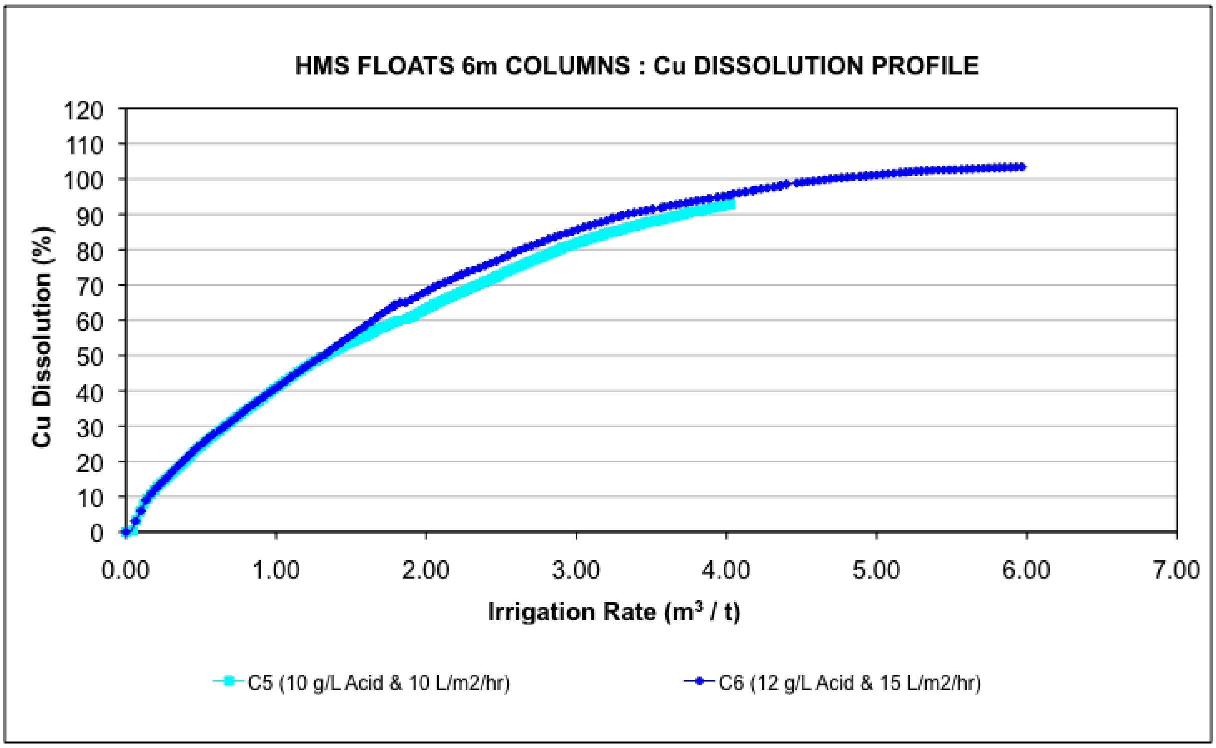

Figure 17-1 HMS Floats Leaching Recovery Profile

Data presented above Figure 17-1 was generated from leaching of a sample of HMS "floats" material, which essentially comprises oxide ore (predominantly malachite) with fines removed.

Design of the leach system incorporates ponds and pumping equipment to facilitate a "two stage" leach. Essentially, solution can be recycled within the heap leach to facilitate maximum terminal recovery from heaps whilst continuing to maximise the PLS grade ahead of the SX plant. The flexibility inherent within the design allows either a counter-current or co-current leach configuration to be employed, thereby ensuring acid utilisation is maximised and acid consumption is minimised.

17.2.4 Area 40 – Tank Leach & CCD

Mineralogy work conducted by Mintek, as presented in report BIC-60 in Appendix 6, demonstrates predominantly malachite mineralisation with minor Chysocolla in some samples. On this basis, agitated leaching was selected for the fines component using sulphuric acid as the leaching agent. Due to the oxide nature of the Kipoi ores, it was not necessary to consider biological or pressure oxidation leaching which apply more specifically to primary and secondary sulphide copper minerals.

Agitated leaching testwork conducted at Mintek during the DFS demonstrated average leach residence times of 4 hours at pH <1.8 were required to achieve total copper recoveries in the region of 85%. Peak leach times were up to 5 hours and as such the leach circuit has been designed on the basis of 5 hours residence time. Three leach tanks in series have been allowed, each with a capacity of 800 m^3.

Effective recovery of leached metals within the Kipoi flowsheet requires washing of the leach residue. The washing process separates and removes entrained soluble metal ions from the leach residue slurry. Washing of slurry streams is typically carried out using either filtration units (most commonly belt filters) or continuous counter-current decantation (CCD) circuits. Due to the presence of clays and the nature of the oxide ores processed in the DRC, belt filtration is not commonly practised as a means of solid liquid separation for leach residues.

During the flowsheet review at the commencement of the DCS, the opportunity to reduce the number of CCD thickeners was proposed. Most CCD circuits utilise six or seven thickeners for high recovery of soluble metal values prior to neutralisation of slurry from the underflow of the final CCD thickener. The design for Kipoi involved disposal of an acidic tailings and reclaim of copper bearing, acidic solution from the tailings facility. On this basis, high recovery of soluble copper via a six or seven stage CCD was deemed unnecessary. It was proposed that capital costs could be reduced by utilising three CCD thickeners at Kipoi, rather than six or seven units.

The reduction of the number of CCD thickeners was evaluated by Metsim modelling the two options in a bid to understand whether the differences in soluble metal losses associated with solution trapped as interstitial moisture in the settled tailings. Copper cathode production increased slightly (by less than 1%) when the model was run with 6 CCD's instead of 3. This was expected since the addition of washing stages to the CCD reduced soluble copper losses in the underflow to tails. Given the minor decrease in soluble copper as compared to significant reductions in capital cost, the 3 CCD design was carried forward with the DFS. An additional calculation was completed which indicated that a 2 CCD circuit is the optimum circuit in terms of NPV. But due to the fact that a thickener can be off line occasionally and a third thickener could be utilised as a neutralisation thickener during process upsets, the marginally economically better option of 2 CCDs was discounted – but remains an opportunity.

Testwork to evaluate the settling characteristics of leached slurry samples from Kipoi was carried out by Mac One Agencies in South Africa as a component of the overall DFS testwork program. The testwork yielded the following conclusions;

- Optimum feedwell density is 5 – 7.5% solids
- Required settling area is 4 m2/hourly tonne
- Kileba settling rates of 6.1 to 6.7 m2/hourly tonne
- Flocculant addition at 20 – 25 g/t
- Underflow density of 55% solids achievable

On this basis, the CCD thickeners for Kipoi have been calculated for the design rate of 133 tonnes per hour, yielding a (minimum) required thickener diameter of 26 m. Underflow pumping capacity has been designed consistent with the target density of 55% solids and the flocculant consumption rates calculated on the basis of 25 g/t to CCD 1 and 20 g/t to each of CCD's 2 and 3.

The Kileba ores exhibit slower settling rates than the design thickener settling rate (under instruction from client) so significant ore blending will be required to maintain nameplate plant production rates.

Overflow solution from the first CCD thickener is pumped to the heap leach system and used as ILS to irrigate heaps and subsequently generate the PLS stream. The Scoping Study flowsheet incorporated a Pinned Bed Clarifier (PBC) for fines removal from the CCD 1 overflow. During the DCS flowsheet review, the PBC was removed from the design on the basis that CCD overflow solution will be directed to the heap leach system and used as ILS solution to irrigate PLS generating heaps. This process of passing the overflow solution through a heap achieves both an increase in copper tenor and settling of fines. Clarification of the agitated leach solutions can thus be achieved without the need for a PBC.

17.2.5 Area 50 – Tailings Disposal

Selection of the tailings disposal system for Kipoi follows conventional design principles for the pump design and disposal system. Due to the relatively low head, only single stage pumping is required. Underflow from the final CCD at 55% solids is pumped to the Tailings Disposal Tank to aid pumping.

Tailings are discharged to the tailings dam via a ringmain with numerous spigots and the profile of the deposited tailings is used to direct solution towards the decant return pumping system.

Process modelling by Worley and Element has determined that acidified process water will not be required to be discharged. However in an extreme event, the excess water will be discharged to the environment after being neutralised with lime. The CCD thickener number 3 and it mixing tank will be used to add lime to the excess water and thickening the gypsum. The underflow target density is 20% and the estimated flocculant consumption is 250g/t .The neutralised overflow is recirculated to the raw water pond and then overflowed to the environment.

17.2.6 Area 60 – Solvent Extraction

Copper solvent extraction has been selected as the process of choice for production of high purity electrolyte solution at Kipoi, for the purpose of producing copper cathode. During the course of the DFS a case study was initiated to evaluate the optimum circuit configuration by comparing a High Grade / Low Grade (two SX trains) style SX plant to a single SX train. The case study involved Metsim modelling of 1 SX plant versus 2 SX plant to determine the differences in copper production rates between the two configurations.

Varying the inputs of the model from 1 SX plant to 2 SX plants resulted in an increase of 1.75% in copper cathode production. This was due to the attendant change in process flow configuration whereby the final stage of heap leaching was irrigated with Heap Leach SX raffinate (containing ~250 mg/L Cu) rather than CCD overflow (containing ~2500 mg/L Cu), thus reducing copper losses to retained interstitial solution.

Whilst the differential in cathode production is reasonably significant, the difference in extraction capacity between 1 and 2 SX plants can be offset by manipulation of organic flowrate and / or extractant strength. The single SX is therefore capable of the required copper extraction at 50,000 tpa production rates but with significantly lower capital and operating costs than a 2 SX plant configuration.

A single SX plant configuration was therefore selected for the DFS and at Phase 2 the plant will comprise two extract, two strip and one wash mixer settlers. During Phase 1 the SX plant will comprise only two extract units and one strip, as this configuration provides sufficient extraction capacity for the 25,000 tpa production rate. Modelling of the SX circuits at Phases 1 (25,000 tpa) and Phases 2 and 3 (50,000 tpa) was carried out using extractant vendor software. The results below Table 17.1 demonstrate that at the design flowrate of PLS (800 m^3/h) and relevant PLS grades, the respective SX configurations will provide the required extraction capacity.

SX Phase	Config.	PLS			Organic		Spent	Raffinate	Recovery	Prodn
		Cu		Flow	Concentration	Flow	Flow	Cu	Cu	**Cu**
		g/l	pH	m^3/h	vol%	m^3/hr	m^3/hr	g/l	%	**MT/yr**
1	2+1	4	1.7	800	13	1000	200	0.17	89.5	**24977**
2 & 3	2+2+1	8	1.7	800	26	1000	400	0.35	78.0	**52795**

Table 17.1 SX Modelling Data

The mass balance indicates a PLS flowrate of 800 m3/h and the mixer-settlers have been sized on the basis of 2 minutes residence time in each of the two mixer stages and a settler flux of 4.9 $m^3/h/m^2$, based on settler dimensions of 22.5 m wide by 19 m long (active dimensions, not including launders).

Entrained aqueous in the loaded organic stream settles in the loaded organic tank and is withdrawn by an aqueous bleed pump and returned to the extract settlers. Further removal of aqueous entrainment occurs in the Coalescer Tank. Entrained organic leaving the extraction circuit is recovered at the raffinate pond using equipment specifically designed for recovering small amounts of hydrocarbon from aqueous streams. Organic entrainment in the electrolyte stream is captured by the anthracite layer in the dual media filters and returned to the SX plant when the filters are periodically backwashed.

Design of the electrolyte filtration system is based on the use of three dual media type filters, with each filter nominally sized to treat electrolyte at 50% above design flow during backwashing of an adjacent filter. During backwashing of one filter, the filtration duty is performed by the second and third filters which operate at an elevated specific throughput for approximately 45 minutes. Operating dual media filters periodically at elevated throughput rates is practised in most commercial SX/EW plants.

17.2.7 Area 70 - Electrowinning

Electrowinning (EW) has been selected as the optimum process route for producing copper cathode at Kipoi on the basis of the conventional nature of the process and ability to produce LME Grade A copper. The design of the electrowinning plant follows industry standard design principles and utilises equipment commonly installed in EW plants worldwide, including polymer concrete cells, stainless steel blanks, lead alloy anodes and a semi – automated cathode stripping machine (CSM).

Plating area on the cathodes will be standard for copper, with a submerged area of 1.1 m^2. Cathodes will be pulled on a seven day stripping cycle and each sheet of copper will weigh approximately 40 – 45 kg. An average current density of 300 (maximum 330) A/m^2 has been used, which should be readily achievable in the operating environment, and results in a requirement for 120 cells of 69 cathodes each. Based on a current efficiency of 90%, the EW facility will operate at a design current of 45, 500 amps in each of the two tankhouses. Total design cathode copper production is 50 000 t/a, however the staged development of the project will involve the initial installation of a single tankhouse with a production capacity of 25,000 tpa.

The copper electrowinning facility includes both polishing and commercial electrowinning cells. Advance electrolyte containing 158 g/L H_2SO_4 and 50 g/L Cu is initially directed to the polishing cells. The role of the polishing cells is to quarantine the effect of any organic to only those cells located in this section. This design principle is commonly employed in tankhouse design to minimise the risk of cathode contamination with SX organic.

A smoothing agent, guar, is added to the incoming rich electrolyte to improve the morphology of the deposited copper. The guar is added via an in-line mixer at a rate equivalent to 0.2 kg/t to 0.3 kg/t of deposited cathode copper. The actual dosage varies according to operating conditions and cathode quality.

17.2.8 Process Design Criteria

The design criteria form the basis for the design of the processing facilities and required site services. Together with the process flow diagrams, the data allows for the definition of the mass balance and the design and specification of equipment. In addition, it allows for the development of schedules for operating requirements, such as power, water and reagents.

The design criteria and the associated mass balances have been used to derive capital cost estimates and schedules for operating requirements such as power, reagents and consumables, etc. Any recovery or similar data (e.g. reagent consumption) presented herein are used for these purposes only and are not statements of predicted plant performance.

The design criteria have been based on data from various sources and all data is referenced to the sources. It is of particular importance to note areas in which assumptions have been made and which require verification.

The Kipoi Copper Project is designed on the basis of an initial production of 25,000 tpa copper cathode at 99.99% purity (LME Grade A) with 95% availability (except crusher area which is 91.3%), based on a 24 hours per day, seven days per week operation. This will ramp up to a final production of 50,000 tpa copper cathode. The design life is based on ten years.

The plant has been designed to be constructed in three phases:

- Phase 1 is based on treating the HMS floats from the existing plant using a new heap leach. The SX/EW section for Phase 1 is designed for 25,000 tpa copper production. The filters and tank farm equipment are sized for 50,000 tpa copper production for future operation.
- Phase 2 is based on a crushing facility for ROM as well as an extra SX/EW train, to reach 50,000 tpa copper production.
- Phase 3 is based on additional equipment to treat HMS slimes using tank leach, CCDs and tailings storage.

The process design criteria can be found in the DFS.

17.2.9 Production Schedule

The mining schedule has been developed by Cube and is detailed within this report Table 16.1.

The plant production schedule was generated (Table 17.2) and utilises existing HMS floats and slimes , the stockpiled medium grade ore and the mining schedule and details all the phases of the Kipoi Copper Project.

.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Phase	1	1 to 2	2 to 3	3	3	3	3	3	3	
Feed Sources & Tonnes										
HMS Floats	867,915	732,085								1,600,000
HMS Fines				540,000	393,000					933,000
Medium Grade - HL		757,902	852,098							1,610,000
Medium Grade - AG			690,000							690,000
Kipoi ROM - HL			61,717	565,894	1,241,002	3,658,307	3,934,904	3,069,014	833,464	13,364,302
Kipoi ROM - AG			11,843	108,592	180,659	614,794	577,063	431,558	120,359	2,044,868
Kipoi North - HL								366,802	633,308	1,000,110
Kipoi North - AG								82,148	148,408	230,556
Kileba - HL			967,652	1,550,539	1,022,501	170,578				3,711,270
Kileba - AG			410,023	628,973	411,282	72,246				1,522,524
Heap Leach Feed, t	867,915	1,489,987	1,881,467	2,116,433	2,263,502	3,828,885	3,934,904	3,517,964	1,466,773	21,367,830
Agitated Leach Feed, t			1,111,866	1,277,566	984,940	687,039	577,063	513,706	268,768	5,420,948
Total Plant Feed, t	867,915	1,489,987	2,993,333	3,393,999	3,248,442	4,515,924	4,511,967	4,031,670	1,735,541	26,788,778
Cu Grade	3.00%	2.80%	1.90%	1.80%	1.90%	1.20%	1.20%	1.60%	1.70%	1.66%
Contained Copper, t	19,094	48,611	57,436	60,160	60,707	52,870	53,755	62,018	28,652	443,303
Copper Recovery	90%	90%	87%	83%	82%	85%	85%	83%	81%	84.9%
Recovered Copper, t	17,185	43,750	50,010	49,992	49,852	45,103	45,960	51,570	23,107	376,529

Table 17.2 Production Schedule

17.2.10 Mass Balance

17.2.10.1 Introduction Phase 3 Model

The Kipoi plant will be constructed and operated in three phases. Phase 3 is the complete plant operating a crushing circuit; integrated heap and tank leaching; and a 50 ktpa tank-house. Many of the inputs to the Phase 3 model also apply to Phase 1 and 2 models; Furthermore, Phase 1 and 2 represent transient states of the plant and therefore the state of the water balance is not considered in great detail since it is assumed any excess solution can be easily contained in existing facilities for the duration of the phase, if necessary.

Full Metsim modelling was undertaken for each phase and the outputs generated were utilised as inputs to the design criteria.

The Phase 3 flow-sheet is water positive as modelled. The main contributors to water balance are rain and evaporation, as shown in the tables and figures below. The main contributor to the positive water balance is rainfall on the heap leaches. Excess rainfall on the dormant rinsed heaps will be diverted to effluent.

The Phase 2 water balance is positive as water is stored with the slimes to be recycled in Phase 3.

The water balance can be largely controlled by adjusting the rate of evaporations on the heaps. Evaporation can be manipulated by

- altering the ratio of dripper and wobblers with wobblers resulting in larger evaporation rates
- recycling more solution flow onto heaps, e.g., irrigating dormant cells

17.2.11 Process Facilities Description

17.2.11.1 Phase 1 - Overview

Under the staged expansion concept, leaching operations and subsequent production of cathode will be achieved at Phase 1 by treating HMS floats material and installing equipment required for the processes of Heap Leach, SXEW.

Handling and stacking of the HMS floats material would be carried out using a conventional agglomerator, overland conveyor and stacker, designed with capacity for the full LOM treatment rate of 3.6 Mtpa. It is estimated that the HMS floats material will total approximately 1.2 Mt at a head grade of 3.0 %.

Equipment installed at the Heap Leach (HL) facility would comprise two leach “cells”, along with ILS and PLS ponds and the storage facility for concentrated sulphuric acid. A raw water pond will also be installed at Heap Leach, with raw water being used for inventory make up and “flushing” of heaps as they reach terminal recovery. Solution pumps and piping installed at the ILS and PLS ponds will have a design capacity for the final plant design flowrates of 1000 m^3/h.

Treatment of the PLS generated in HL would require the installation of an SX/EW plant with the capacity to produce up to 25 ktpa. The SX plant comprises a total of three mixer settlers, being two extract units and one strip unit. Civils required for future expansion of the SX to five mixer settlers would be installed during the Phase 1 development. Additionally, future tie in points would be installed on the SX piping and mixer settlers to facilitate the brownfields SX expansion with minimal downtime.

A 25 ktpa EW facility would be installed during Phase 1 and would comprise a single Cathode Stripping Machine (CSM), three electrolyte filters and tank farm. The filters and tank farm would be sized for the full 50 ktpa future capacity of the plant. A Process Facilities Description is presented for Phases 1-3 in the following sub-sections, on an area by area basis.

A schematic flowsheet for Phase 1 is provided in Figure 17-2.

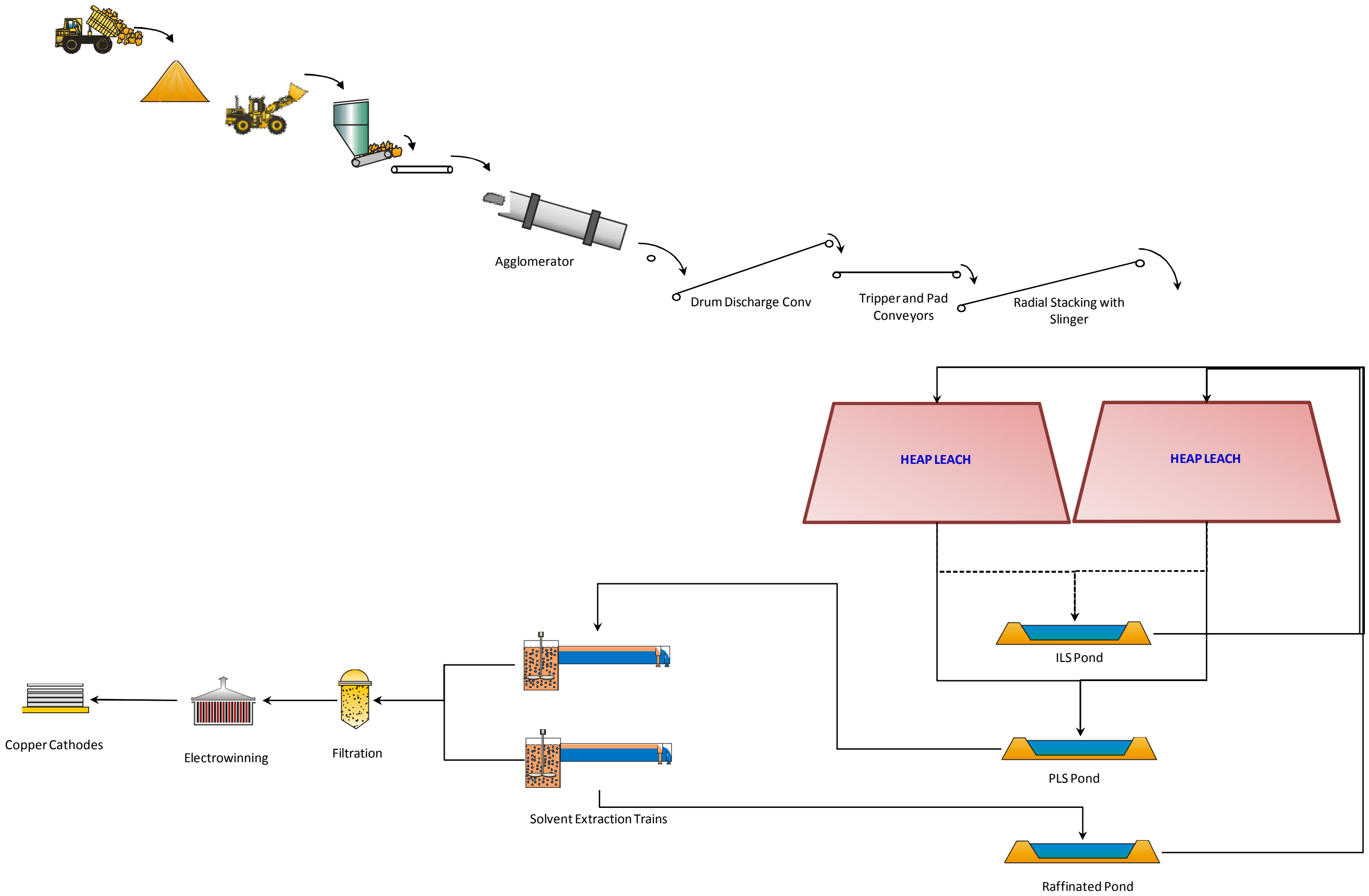

Figure 17-2 Phase 1 Processing Plant Flowsheet

17.2.11.2 Phase 2 - Overview

Equipment installed at Phase 2 will be required for treatment of run of mine material via the processes of crushing, screening and wet scrubbing (size separation), followed by heap leaching. The slimes generated will fill the slimes dam. Initially the Phase 2 plant will treat a medium grade stockpile estimated to contain approximately 2.4 Mt at a headgrade of 2.60 %. Treatment of the medium grade stockpile will occur concurrently with the treatment of the remaining HMS floats. As the medium grade stockpile is depleted, ore from Kipoi Central will be processed at a rate of approximately 2.3 Mtpa.

The crushing and screening equipment is described in the Phase 2 MEL and essentially comprises a rolls type crusher and secondary cone crusher, along with a double deck screen and wet scrubber. It is envisaged that the design of the cyclones may be modified slightly from their “de-watering” duty at Phase 1 to a configuration that achieves the required size classification. An additional slimes storage pond has been allowed for as the existing storage facility will have in sufficient capacity.

In addition to the crushing and screening equipment, additional equipment will be installed in SX and another 25 ktpa EW facility built. SX will require two additional mixer settlers and additional piping to facilitate tie in to the existing circuit. The EW plant will be a duplicate of the first EW plant with the exception of the tank farm and electrolyte filters as this equipment would be installed at Phase 1.

A schematic flowsheet for Phase 2 is provided in Figure 17-3.

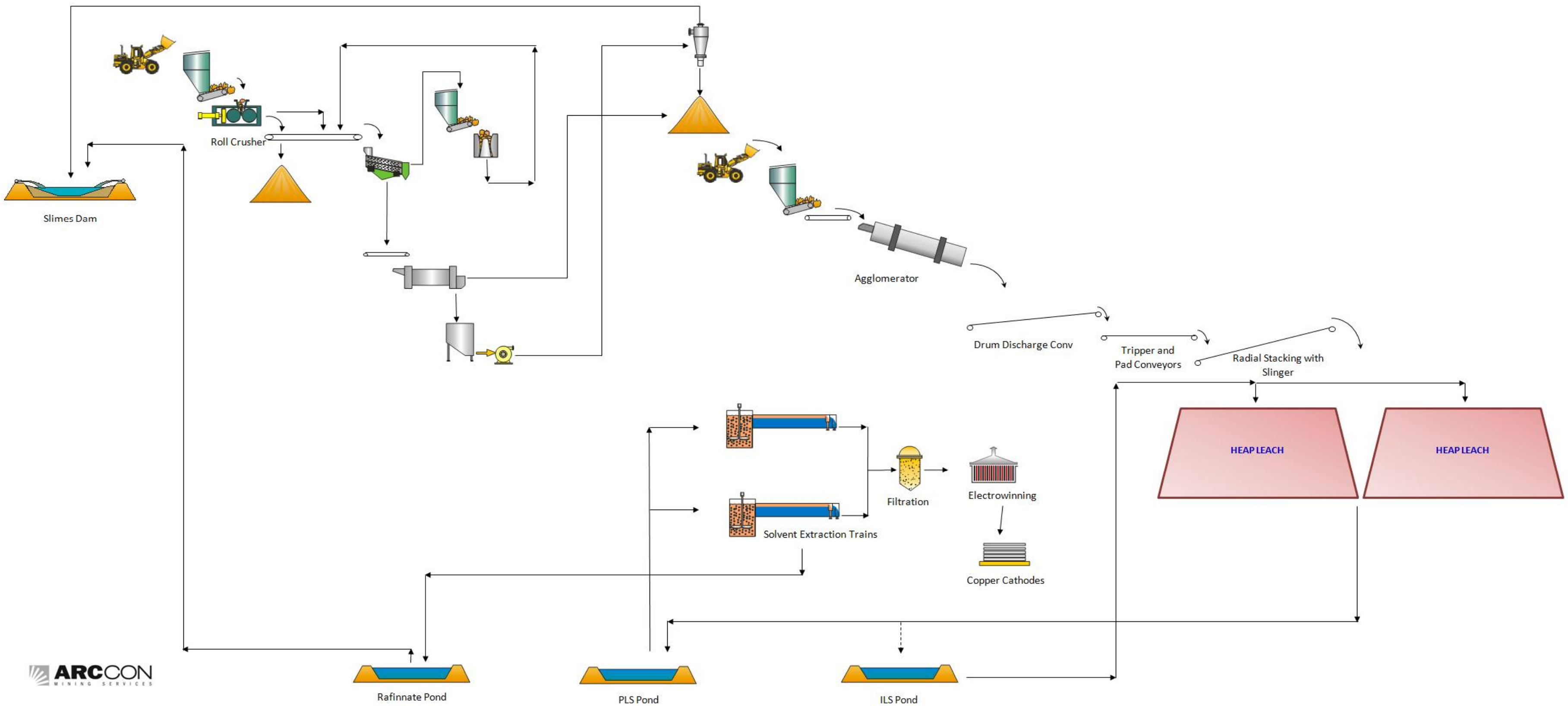

Figure 17-3 Phase 2 Processing Plant Flowsheets

17.2.11.3 Phase 3 - Overview

An estimated 933,000 tonnes of HMS slimes at a head grade of 3.0% will be generated as a by-product of the existing HMS plant. Installation of the Tank Leach, CCD and TSF would allow this material to be treated to maintain cathode production rates at a time when the HMS floats stockpile is being depleted. Thereafter, the fines component of the ROM ore at approximately 900,000 t/a will be processed in the tank leach section.

Plant and equipment required to be installed during Phase 3 comprises the leach tanks, CCD circuit and tailings storage facility (TSF). Despite the fact that HMS slimes will initially be treated at a relatively low throughput, civils, tanks and mechanical equipment will be installed for the full design capacity of 1.12 Mtpa for the slurry circuit. No additional SX/EW equipment is required at this phase of development due to the fact that processing of the slimes will only supplement copper units to SXEW as processing of HMS floats decreases, thus maintaining the production rate at 50 ktpa cathode.

During Phase 3, the ore from Kipoi Central will be processed at a rate of approximately 4.5 Mtpa- see Table 6.2.1-1 for annual scheduled ore rates. During high copper grade years, ore rates will be limited below 4.5 Mt/a due to the 50,000 tpa copper capacity electrowinning ceiling.

A schematic flowsheet for Phase 3 is provided in Figure 17-4.

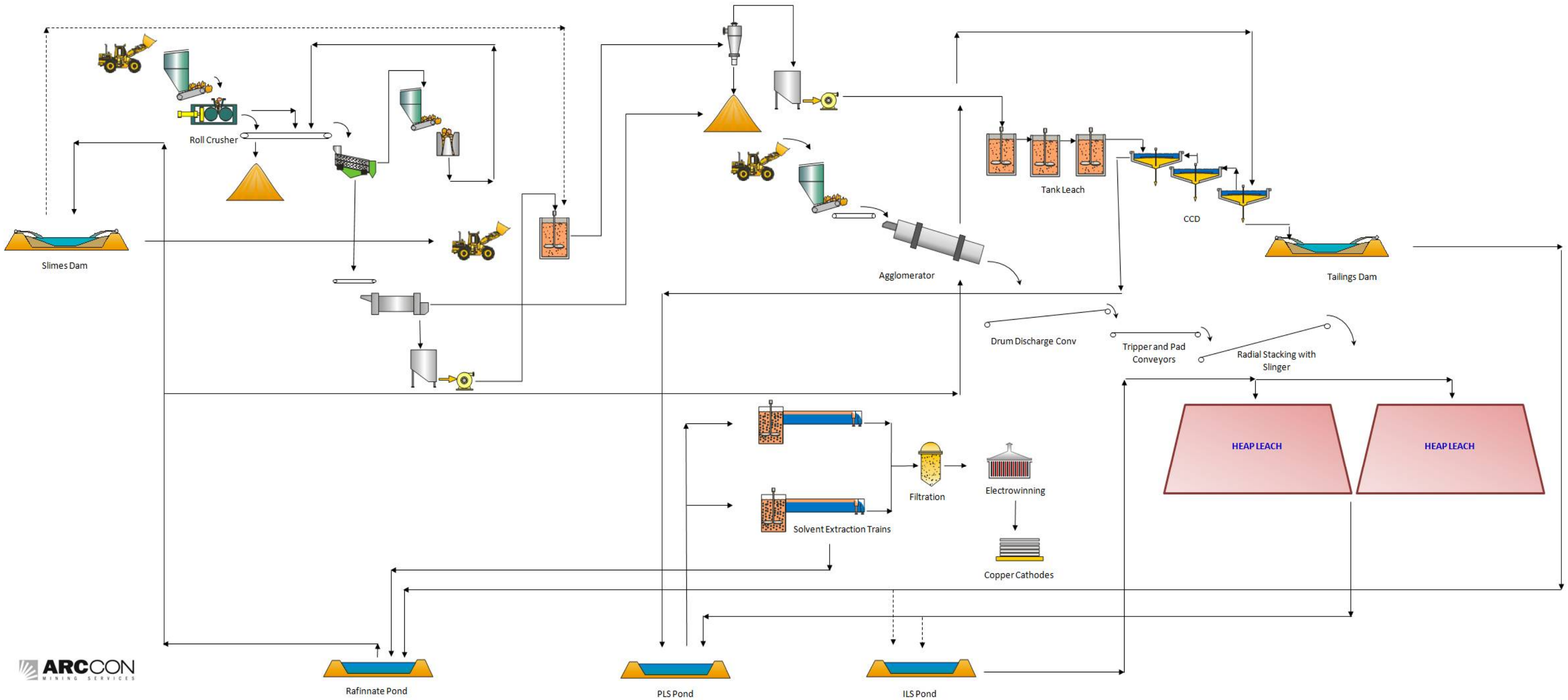

Figure 17-4 Phase 3 Processing Plant Flowsheet

17.2.12 Plant Location and Layout

17.2.12.1 Site Selection

Several potential sites within in the project area were available to position the proposed process plant and heap leach pad and tails storage facility. To compare the advantages and disadvantages of each, a “Site Selection Matrix” was developed. The site selection matrix was developed to consider relevant factors including haul distances, tails facility and heap leach pad constructability, environmental and social issues, impact on existing infrastructure and current and future mining operations. The resultant “score” was used to rank each site to accord with its suitability.

Six potential sites were considered. Site layouts were produced of each to show existing infrastructure, ore bodies, the proposed process plant, heap leach pads and tails storage facilities and other relevant features.

Site B-3 with a high score of 338 is the selected site. Advantageous features of Site B-3 are:-

- Process plant and heap leach pads are upstream of the TSF thus confining runoff to a single valley and simplifying runoff management
- Short haul distance to ROM pad
- Short conveyor length to heap leach pad
- Wholly within project lease area

As the study progressed, optimisation of the B-3 layout was achieved. With a smaller than anticipated heap leach pad, the process plant has been located between the existing HMS plant and the leach pad. The final Site layout is shown in Figure 17-5.

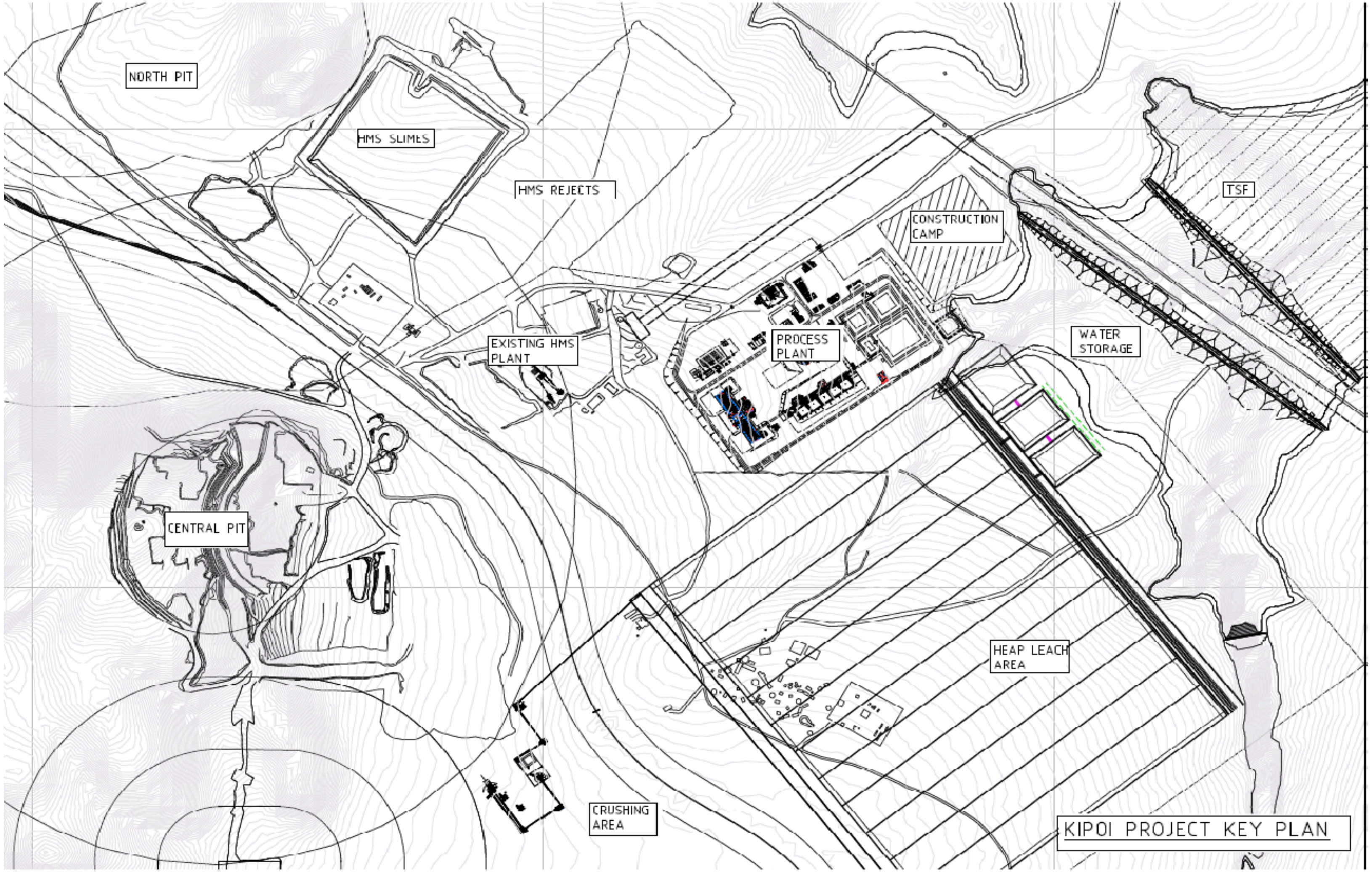

Figure 17-5 Site Layout Plan

17.2.12.2 Plant Location and Layout

The new Leach Pad is located approximately 600m South East of the existing HMS Plant and will be constructed in a North West to South East direction during the life of the mine. The location was chosen to make best use of the local topography and minimise materials handling during the various stages of the Project. For Phases 1, the agglomerator is located North West of the heap pad in close proximity to the existing HMS, to minimise handling and piping distances for the HMS Rejects and Slimes re-treatment. For Phases 2 and 3, the Agglomerator and cyclones will be relocated to the comminution circuit local to the Kipoi Central Mine development.

The Agitated Leach and SX/EW Process Plants are located between the existing HMS and new Heap Leach pad, to the South of the existing main access road. The location was chosen to minimise materials handling, overland piping, and HV cable routing to the plant. The location also offers opportunities to utilise gravity flows through the process circuit. The plant location ensures an uninterrupted flow of SX liquors to a lined emergency catchment pond in an emergency upset event.

Agitated Leach Tanks are positioned in a `herringbone` pattern to give a simple, practical, intertank launder layout, and allowing any tank to be taken offline whilst continuing leach processing. The CCD Thickeners are also positioned in a herringbone pattern to minimise intertank pipework. The PLS Transfer Pond is located North East of Agitated Leach/CCD allowing gravity flow to the pond. An area immediately South West the Agitated Leach/CCD Area is allocated for future expansion.

The Solvent Extraction Plant is located to minimise pipe runs to Electrowinning and allow gravity flow of aqueous material to the Plant Raffinate Pond. Fire Risk areas in SX have been identified, and adjacent plant and buildings have been located outside the dangerous zones.

The Electrowinning plant is located to the South West of the plant operations to minimise EW fume dispersion over the plant (Prevailing winds – from North East and South East).

The Plant HV Switchyard, Diesel Power Station and the 11kV Switchroom are located within the Plant boundary adjacent to the SNEL Switchyard to minimise electrical cabling distances.

Diesel for the use of the Power Station will be located within the Power Station boundary. Diesel for plant vehicles is also stored in the same location.

Sulphuric Acid Storage is located conveniently close to the main access road for delivery vehicles. This location also minimises Sulphuric Acid distribution pipework distances.

Project infrastructure buildings are located within the Process Plant boundary, to the South of the main access road.

The Heap Pad and Agitated leach plant both have a natural drainage flow in an Easterly direction to a catchment area.

For Phase 2 of the project, the introduction of ore from the Kipoi Central Mine development requires the construction of the comminution circuit South East of the existing railway line.

The ROM Pad is strategically located with minimum haul distances from the open pit. The Primary and Secondary Crushers are located in a common Crushing Area. The Sizing Screen, Cyclones, and the repositioned Agglomerator, are located together in a bunded concrete area with a sump and clean up pump. Material sized by the screen for the Heap Leach Treatment is transferred by Overland Conveyor to the Heap Leach Feed Tripper Conveyor. The Cyclones are positioned to allow underflow to be piped to the Agglomerator Feed Chute by gravity. Cyclone overflow is pumped to the Agitated Tank Leach using the overland conveyor structure for support.

The Project area is enclosed by a security fence, and Guard/Gatehouse will be located on the main access road, at the entry to the Project Area.

17.2.13 Equipment Selection

In general, equipment has been selected based on its suitability for meeting the process requirements, including the mass balance and process design criteria. Equipment selection has been carried out on the basis of fit for purpose design, but with all necessary control and monitoring systems, safety guarding and conformance to international standards for design, to provide safety in operation.

17.2.14 Plant Control Philosophy

17.2.14.1 Plant Control System

17.2.14.2 Control System Hardware

The Process Control System (PCS) is responsible for monitoring all plant equipment and instruments and for control of drives not associated with a vendor Programmable Logic Controller (PLC). Design of the PCS will be based upon the latest PLC and SCADA technologies. Power will be supplied to the PCS by Uninterruptible Power Supply (UPS) units with a nominal standby capacity such that the PCS remains available at all times to provide control of essential systems.

At the completion of Phase 2, plant operations will be monitored and controlled from a central control room. During Phase 1, equipment required for agglomeration and stacking will be controlled locally whilst the SX/EW plant will be controlled from a small control room located adjacent to the SX/EW plant. The PCS will provide the following:

- Dynamic graphic displays
- Group displays
- Remote stop/start facility for selected drives
- Control loop displays
- Graphics detailing all interlocks associated with group starts
- Graphics detailing drive status
- Fault and run indication for all drives
- Alarm indication and recording
- Data trending (real time and historical data)
- Data history storage
- Report generation
- Event indication and recording
- Loop tuning
- Field device status indication
- Plant power usage summary
- Emergency circuit status
- Flow totalising

17.2.15 Engineering Design Basis

The Kipoi Copper Project is designed on the basis of an initial production of 25,000 tpa copper cathode at 99.99% purity (LME Grade A) with 95% availability (except crusher area which is 91.3%), based on a 24 hours per day, seven days per week operation. This will ramp up to a final production of 50,000 tpa copper cathodes. The design life is based on ten years.

In general, the plant is designed in accordance with the overall process requirements, the local conditions and the expected feed grade.

All three phases will be engineered to appropriate local and international standards and codes, using fit for purpose design and the appropriate safety standards.

Each phase has been designed to be upgraded for the next phase, where practical. For example the EW building is symmetrical, with separate cathode handling equipment, rectiformers and bus bars to allow the addition of the next phase with minimal disruption to operations. Similarly, the Phase 2 solvent extraction mixer/settlers will be identical to the Phase 1 mixer/settlers and are designed to be an “add on” to the existing mixer/settlers, to keep disruptions to the Operating Plant to a minimum.

Fire safety is paramount with solvent extraction plants and this was integrated into the design basis.

17.2.16 Conclusions and Recommendations

17.2.16.1 Testwork Conclusions

As a consequence of the test work it was possible to establish key inputs into the design criteria

Ore Characteristics

Abrasion Index	– average	0.07
	- Variability	0.04 – 0.29
	- peak	0.15

Ore Split (at 212um)

Agitated Leach	– average	22.8%
	- Variability	13 – 30%
	- peak	25%
Heap Leach	– average	77.2% (based on mass average feed)
	- Variability	87 – 70%
	- peak	80% (based on production schedule)

Agitated Leach

Residence time	– average	4 hrs
	- Variability	2 – 5 hrs
	- peak	5 hrs
Copper Recovery	– average	80% (of total copper)
	- Variability	50 – 91%
	- peak	85%
Acid Consumption	– average	9.5 kg/t
	- Variability	2.5 – 60 kg/t
	- Peak	25 kg/t
Thickening	– average	4 m^2.hr/t
(Post Leach)	- Variability	2 – 7 m^2.hr/t

	- peak	4 m^2.hr/t

TSF Leach Recovery

Copper Recovery (based on mineralogy)

	– Average	5%
	- Variability	1 – 14%
	- peak	10 %

Heap Leach

Solution Application

	– Average	5 kL/t
	- Variability	4 – 7 kL/t
	- peak	6 kL/t
Leach Cycle time	– average	170 days (feed)
	- Variability	120 – 300 days
	- peak	170 days (based on production schedule)
Copper Recovery	– average	83% (of total copper)
	- Variability	70 – 90%
	- peak	90%
Acid Consumption	– average	16.9 kg/t
	- Variability	7 – 78 kg/t
	- Peak	20 kg/t

18.0 PROJECT INFRASTRUCTURE

This section has been extracted from the executive summary in the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012. Sources of information and diagrams have not been referenced individually.

The Kipoi Project is serviced from Lubumbashi, the second largest city in the DRC and the centre for the significant mining activity currently being undertaken in the Katanga province. High-voltage power lines of the national grid and the Lubumbashi-Likasi railway line traverse through the project area. The railway line is currently in use and is being ballasted and will be providing direct services to Ports in Angola on 2014. Manufacturing and engineering support services are available from Lubumbashi. The main Lubumbashi to Likasi road was resurfaced in 2009 and is now considered an all weather seal road in good condition. The road is sealed to Tenke and expected to be through to Kolwezi before the end of 2013.

The mining concessions do not have any permanent residents and the nearest permanent village is located at the main highway. The village of Kangambwa has an estimated population of 375 and will be a source of local labour.

Stage I of the Kipoi Copper Project, which has already been executed and is in operation, includes the following infrastructure:

- An upgraded access road from the Lubumbashi - Likasi highway.
- Site roads, including rail crossings.
- Construction and operations accommodation in an existing expanded and refurbished camp.
- Plant site buildings and facilities, including offices, laboratory, gatehouse, weighbridge, workshops and stores.
- Potable water facilities.
- Raw water supply.
- Process water supply.
- Storage facilities for scrubber slimes (ore fines) and HMS plant floats.
- Mining support facilities including workshops and an explosives magazine.
- Communications and IT.
- Power supply provided by a diesel power station. Grid power is under construction for a 5MVA supply of the 120KV line located 800 meters east if the plant site.
- A Fuel Storage Facility supplied by contract fuel provider, owned by SEK.
- Fleet of operational vehicles.
- Mobile equipment including cranage, load haul dump, kid steer loaders and forklift facilities.
- Security.

Infrastructure for Stage 2 includes:

- Temporary construction facilities.
- Power supply
- Water supply
- Accommodation, catering and recreational facilities
- Mobile fleet and utility vehicles
- Medical and training facilities
- Haul roads and services roads.
- Site services and utilities.

18.1.1 Haul Roads and Service Roads

Haul Roads

Haul roads will be constructed by the Mining Contractor.

Service Roads

Service roads will be divided into three categories.

Plant Access Roads

The existing access road will be upgraded with either resurfacing or sealing depending on the cost of the later.

Minor Access Roads

Minor access roads will be simple ‘push tracks’, suitable for light 4WD vehicle access. The accommodation access road will be a permanent road constructed for road freight access delivering food stuffs to site.

Plant Site Roads

The Plant site road systems will service the Plant site, one connected to the plant access road and used for consumable deliveries and copper shipments and other roads with constant heavy vehicle use, the second connected to the mine haul road system and used to connect mining vehicles to other services, such as tailings dams during construction.

18.1.2 Site Services and Utilities

Raw Water

Existing process water is supplied from the Sofwango River, about 7km from the new Process Plant.

The DFS study has estimated that current water will be sufficient for all phases of the project de to the farming of water via the WSF.

Raw water will be stored in a HDPE-lined raw water pond, located in the Processing Plant area, with a capacity of 5,000m3. This will provide about 12 hours of storage for the full 4.5 Mtpa processing facility.

Distribution of the raw water from the pond is achieved by duty and standby centrifugal water pumps via a priming tank, and a piping distribution network that reticulates water to all process areas, as required.

A Raw Water Storage Facility is provided as part of the overall site water management plant. It will store run-off water from the Process Plant catchment. A pumping system will be installed allowing for direct pumping to the raw water pond.

Fire Water

A fire water reserve will forms part of the raw water system. The complete fire pumping and distribution system will be designed in accordance with the requirements of internationally accepted standards. The pumping equipment will be comprised of an electric duty pump, an electric jockey booster pump and a diesel engine-driven backup pump, which will service a dedicated fire main circuit, covering all facilities within the process area and infrastructure plant buildings for the project.

Process Water

Acidic process water will be returned from the Tailings Storage Facility. The return process water will be returned to a 20,000m3 Raffinate Transfer Pond. Distribution of the process water from the pond will be achieved by duty and standby centrifugal pumps, and a piping distribution network that reticulates water to all process areas, as required.

Potable Water

Feed water for the potable water supply comes from the raw water system. Raw water will be treated through a Water Treatment Plant designed to remove iron and other contaminants and produce high quality clean water. A small Dosing Facility is provided, to operate on demand and condition the water to conform to World Health Organisation (WHO) criteria for potable water.

Potable water will be stored in a potable water tank and will be reticulated around the Process Facility by duty and standby centrifugal pumps to service the safety shower circuit, ablution facilities and amenities, as required.

Tailings Storage Facility

The location of the Tailings Storage Facility is shown on Figure 5-2. Engineering and design details are provided in Section 5.8.

The Tailings Storage Facility will receive feed, once tank leach operation commences.

18.1.3 Power Supply and Distribution

Electrical Design Principles

Standard Voltages

SNEL network high voltage (HV) supply 132kV 3Ø 50 Hz

Plant medium voltage (MV) supply 11kV 3Ø 50 Hz

11kV for motors above 1000kW*

MV Circuit breaker closing/tripping maintained supply 48V (dc)

Plant operating voltage 525V 3Ø + Neutral 50 Hz

525V for motors up to 400kW*

380V for small power and lighting

220V for single phase socket outlets

Control voltage 110 volts ac, one pole earthed

PLC supply 110 volts ac 50 Hz

PLC inputs 24 volts dc

PLC outputs Voltage free contacts suitable for 110 volts ac 50 Hz and 24 volts dc

Solenoid valves 24 volts dc

All analogue signals will be 4-20mA

Power Generation

SNEL is the primary grid power provider in the DRC region and is the only known provider in the Kipoi Region. The neighbouring Kinsevere Mine and other mines in the area have frequently reported poor and inconsistent grid supply from the SNEL network. Voltage fluctuations on the 110kV overhead line, running through the property lease of the existing site, have been measured up to ±15% of nominal voltage and the capacity available on the overhead line is limited.

A detailed report by Econergie on SNEL power supply system and its capabilities was provided.

Diesel Generation Bank

The required power consumption (approximately 18.3 MVA running load, 26.7MVA connected load) can be met by seven generator units in operation and with a minimum of one engine on standby duty or off load for maintenance purposes. Each generator unit has a rated capacity of 1.8MW continuous power. The system will be complete with fuel handling, lubrication, air handling, exhaust system, starting equipment, synchronizing equipment, electrical distribution switchgear, noise suppression and other auxiliary equipment.

18.1.4 Building Services

Administration Office

The site administration office will be a single storey modular building assembled from a series of standard prefabricated transportable units constructed from sandwich panel, external aluminium door and window frames, internal timber door frames and a pitched-profile metal sheet roof. Floor coverings will be linoleum. Allowance is for 362m2 of floor area (40m x 9m), suitable for accommodating the Plant and mining administration.

Plant and Mine Laboratory

A single laboratory facility will be provided for both Plant and mine requirements. The laboratory and sample preparation facility will be a modular pre-fabricated transportable building constructed from sandwich panel, external aluminium door and window frames, internal timber door frames and a pitched-profile metal sheet roof. Floor coverings will be linoleum.

Allowance is for 155m2 of floor area, suitable for the staff to conduct routine test work and 76m2 of other covered areas.

Plant Workshop and Warehouse Facility

The plant workshop/ warehouse building will be a combined structure with a total of 702m2 of floor area split into eight bays of 6m x 15m each. It consists of a steel-framed building, clad with profile metal sheet. The floor will be reinforced concrete.

Gatehouse

The gate house will be a prefabricated transportable building constructed from sandwich panel, external aluminium door and window frames, internal timber door frames and a pitched-profile metal sheet roof. Floor coverings will be linoleum. Allowance is for 20m2 of floor area (6m x 4m) including two offices and ablutions. The crib room will be air conditioned with split-system reverse-cycle air-conditioners.

The building will be supported on concrete strip footings.

Ablutions

The absolution block will be provided as a pre-fabricated transportable building constructed from sandwich panel, external aluminium door and window frames, internal timber door frames and a pitched-profile metal sheet roof. Floor coverings will be linoleum. Allowance is for approximately 30m2 of floor area consisting of 3.9m x 1.5m for female ablutions and 3.9m x 5.8m for male ablutions.

Reagents Store

It will be provided as a steel framed building 216m2 with metal-sheet roof and wall cladding on three sides and a concrete floor. It will consist of three bays 3m x 6m x 12m.

Training Facility

The training facility will be a prefabricated transportable building constructed from sandwich panel, external aluminium door and window frames, internal timber door frames and a pitched-profile metal-sheet roof. Floor coverings will be linoleum. Allowance is for 104m2 of floor area (8m x 13m).

Emergency Services Buildings

The building will be a prefabricated transportable building constructed from sandwich panel, external aluminium door and window frames, internal timber door frames and a pitched-profile metal-sheet roof. Floor coverings will be linoleum. Allowance is for 142m2 of floor area (8.4m x 17m). The building will have an adjacent carport structure consisting of a profile metal-sheet roof and open sided metal-framed structure with a concrete floor suitable for the ambulance parking space and drive through access.

Control Room

The control room will be a prefabricated modular unit with external aluminium door and windows. The control room will be 2.5m x 12m, air conditioned with split-system reverse-cycle air-conditioners.

18.1.5 Permanent and Construction Accommodation

A new permanent camp for the Kipoi Project will be constructed by SEK in early 2013. This camp will be able to initially house 300 people and will later be expanded to over 400.

The permanent camp is located 4km from the plant in an elevated position.

The current camp residence which has fully catered facilities for 186 people and will be made available as the contractor’s construction camp.

The existing Mining Contractor MCK has its own existing permanent camp and this will continue to be utilised by the contractor.

18.1.6 Security

The existing security system on site will be upgraded.

There will be a single access point into the site, via the access road from Lubumbashi Road. There will be a gate-house with a boom-gate. The gate-house will have space for SEK security personnel, along with sufficient room for local police.

19.0 MARKET STUDIES AND CONTRACTS

The Kipoi oxide concentrate is sold through an offtake agreement executed with Trafigura and their local operating company. This agreement exists for as long as oxide copper concentrates are sold. The Stage 2 copper cathode production has not been committed under an offtake agreement and will be sold to the highest bidder at the mine gate. Marketing is straight forward and readily available with many highly skilled and competent marketing groups available to assist with the sales of copper and cobalt.

SEK has entered into agreements for mining for ore and waste with MCK Trucks SPRL, Trafigura for the sales and offtaking of the oxide copper concentrate, ISS for the delivery of catering services, Puma for the supply of diesel and SDV for supply of freight forwarding services.

TIGER has received expressions of interest and indicative non-binding terms sheets to acquire copper cathode. At this stage, TIGER has not executed any cathode off-take agreement.

The commodity price projections for long term copper in the study was $3.00/lb which was based on recent projects by commercial/investment banks.

The selected SXEW process is robust and offers a history of performance and certification for delivery against the LME Grade A product.

The copper cathode produced will be a highest deliverable standard and no further refinement is required prior to realizing the sales of the product. Point of delivery is usually not at the mine gate but rather at nearest port of shipping.

The Quotation Period hedging has been assessed by TIGER and a deep market support is available for short term hedging against delivery. TIGER has active short term hedging facility in operation for the oxide concentrate.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

The Stage 1 operations are green and clean relative to most mining operations. The copper concentrate product is generated without using any chemicals for beneficiation. The completed mining process results in the depletion of the naturally occurring toxic enrichment of copper and cobalt in the soils and earth, leaving depleted waste ready for nitrification and planting with cash crops.

For Stage 2 of the project an EIE/ PGEP (the English translation being Environmental Impact Assessment and Environmental Management Plan) was prepared, submitted and subsequently approved in Q3 2012 This Environmental Impact Assessment and Environmental Management Plan (EIE/PGEP) for the revised project included:

- Compliance with the EIA Directive in the preparation of the EIE/PGEP
- A presentation of the project;
- An analysis of the environment affected by the project;
- An analysis of the impacts of operations on the environment;
- A proposed program of mitigation and rehabilitation;
- A detailed budget and financial plan for the Environmental Management Plan including measures for mitigation and rehabilitation
- Establishment of the necessary financial security required for the environment;
- A report on the public consultation process undertaken during the preparation of the EIE/PGEP and planning of a sustainable development programme.
- Certification of compliance.

Some of the key aspects of the EIE/PGPE submission were:

- SEK holds mining exploitation permits recorded in the DRC Mining Registry, as PEs 11383, 11384, 11385, 11386, 11387 and 533.
- No villages are located in the licenced area.
- The licence area of SEK is not crossed by any permanent rivers,
- Mitigation measures provided to avoid contamination of local water, ground and surface, soil, vegetation and air.
- Mitigation measures provided to avoid land degradation is discussed with measures to reduce the impact of erosions and structural changes.
- Project OHS&E plan provided. Plan of Sustainable Development provided; which is already in place as part of the existing Kipoi Stage I Operations.
- Decommissioning and Rehabilitation Plan.
- Environmental bond value will be USD $3,058,000.

The EIE/PGEP has been approved demonstating the standard of the submission and the willingness of government to support the ongoing operation at Kipoi.

Environmental bonds have been established with escrowed accounts established for future rehabilitation of the mine site.

The DRC government requires a commitment from TIGER to 0.5% of profit as a sustainable fund for the community development

A study on mine closure (remediation and reclamation) requirements and costs was completed as part of the Stage 2 DFS.

21.0 CAPITAL AND OPERATING COSTS

This section has been extracted from the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012. Sources of information and diagrams have not been referenced individually.

21.1 Capital Costs

The Capital Cost Estimate covers the cost of managing, designing, procuring and constructing the Process Plant and associated infrastructure described in this study. It has been prepared using the "first principle" method, and is to an accuracy of -5% +15%. Each of the three development phases have been costed separately and the overall capital cost is summarised in Table 21.1.

Description	Phase 1	Phase 2	Phase 3	Total
General and Buildings	35,841,181	13,977,738	13,767,339	**63,586,258**
Crushing	1,723,201	15,459,869	1,888,898	**19,071,968**
Agglomeration & Stacking	21,258,744	5,815,128		**27,073,872**
Leaching	371,128			**371,128**
CCD		171,110	11,414,294	**11,585,404**
Tailings Disposal		28,845	533,434	**562,279**
Solvent Extraction	6,245,904	3,338,770	419,404	**10,004,079**
Electrowinning	26,684,821	21,676,452	220,774	**48,582,047**
Reagents	3,372,789	1,292,016	164,999	**4,829,804**
Services	2,193,736	165,337	38,058	**2,397,131**
First Fill & Spares	2,128,618	1,522,857	433,036	**4,084,511**
Indirect Construction Costs	9,931,680	4,445,505	1,888,373	**16,265,557**
Commissioning	2,209,306	1,270,813	1,149,000	**4,629,119**
SUBTOTAL	111,961,107	69,164,442	31,917,608	**213,043,157**
EPCM	18,780,711	10,244,024	5,122,012	**34,146,748**
Contingency	11,564,120	7,001,364	3,287,822	**21,853,306**
Owner's Costs	7,538,700	4,354,350	4,104,530	**15,997,580**
Custom Duty	918,934	592,150	268,091	**1,779,175**
Other Import Duties				
Value of Total Imports				
BARE COSTS	150,763,573	91,356,330	44,700,063	**286,819,966**
Additional Capital				
WSF Phase 1	4,023,441			**4,023,441**
WSF Phase 2		8,090,625		
Tiger Permanent Camp	6,110,797	4,073,864		**10,184,661**
HV Upgrade		8,693,716		**8,693,716**
HV Power Line & Substations		12,820,090		**12,820,090**
Tailing Pipeline (2.5 km)			401,824	**401,824**
Tailing Return Water Pipeline			327,981	**327,981**
TSF (Stage 1)			24,660,390	**24,660,390**
TOTAL PROJECT COST	160,897,810	125,034,625	70,090,258	**356,022,694**
Deferred Capital				
Heap Leach incl. Piping (Year 3)			13,338,655	**13,338,655**
Relocation of Railway Line				**1,643,250**
Closure Cost				**12,500,000**
TOTAL DEFERRED CAPITAL				**27,481,915**
TOTAL LOM PROJECT COST				**383,504,599**

Table 21.1 Capital Costs Estimates for Phases 1, 2 and 3

21.2 Operating Costs

The operating costs were calculated for the various feed sources based on testwork data, materials costs and unit rates developed from various sources. The operating cost estimate has an accuracy of -5 +15%. All costs are in US dollars at second quarter 2012.

Operating costs were calculated for the following areas:

- Mining and Geology.

- Process plant.
- Site administration and support (including security).

The Production Schedule was used to determine the tonnage of each ore type and the projected operating costs for each phase. The Operating Costs are summarised below in Table 21.2.

	Phase 1		Phase 2		Phase 3	
COST CENTRE						
	$/t ore	$/lb of Cu	$/t	$/lb of Cu	$/t	**$/lb of Cu**
Mining & Geology Labour	$1.54	$0.03	$0.77	$0.020	$0.45	**$0.02**
Contract Mining	$0.00	$0.00	$1.50	$0.039	$13.60	**$0.53**
Total Mining Costs	$1.54	$0.03	$2.27	$0.059	$14.05	**$0.55**
Power	$19.82	$0.44	$8.24	$0.215	$5.53	**$0.21**
Reagents	$3.97	$0.08	$2.97	$0.078	$5.87	**$0.23**
Process Plant Labour	$6.56	$0.13	$4.37	$0.114	$2.33	**$0.09**
Plant Maintenance & Consumables	$3.21	$0.06	$2.68	$0.070	$1.71	**$0.07**
Laboratory	$0.30	$0.01	$0.21	$0.005	$0.39	**$0.02**
Mobile Equipment (incl Diesel & Mtce)	$1.05	$0.02	$0.71	$0.018	$0.54	**$0.02**
Total Processing Costs	$34.92	$0.74	$19.18	$0.500	$16.37	**$0.64**
Administration Labour	$1.31	$0.03	$2.19	$0.057	$1.20	**$0.05**
General & Administration Expenses	$1.25	$0.03	$2.65	$0.069	$1.58	**$0.06**
Total Admin Costs	$2.56	$0.05	$4.84	$0.126	$2.78	**$0.11**
TOTAL OPERATING COSTS	$39.02	$0.83	$26.29	$0.686	$33.19	**$1.29**

Table 21.2 Operating Costs for Phases 1, 2 and 3

The largest cost components are power and contract mining costs. Average power cost is 15c/kWh based on Megatron supply and diesel generation back-up.

No taxes or head office support are included in these operating costs.

22.0 ECONOMIC ANALYSIS

This section has been extracted from the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012. Sources of information and diagrams have not been referenced individually.

A financial model was provided by Tiger Resources Limited. The model included outputs from the Metallurgical test work, Mine Production Schedule, Capital Cost Estimate and Operating Cost Estimate.

The copper prices used is the model are as published in the August 2012 Consensus Economics Forecasts.

2014	2015	2016	2017	2018(Long Term)
$3.40	$3.40	$3.40	$3.40	3.00

Based on the base case inputs the project presents:

- Exploitation of the existing HMS stockpiles along with Kipoi Central, Kileba and Kipoi North orebodies (totalling 26.7Mt @ 1.66% Cu).
- A 9 year mine life at a maximum production rate of 4.5Mtpa producing at a maximum of 50,000tpa copper cathode.
- LOM production of 377 kt of copper at a recovery rate of 85% and acid consumption of 16kg/t.
- Capital cost to commence production of $161M with a total LOM capital of $383M
- Average operating costs are summarised in Table 22.1:

Direct Opex* ($/lb)	Transport + Export costs ($/lb)	C1 ($/lb)	Depreciation Amortisation ($/lb)	Royalties ** ($/lb)	Total Cost C1+C2 ($/lb)
$1.13	$0.26	$1.39	$0.46	$0.12	$1.98

Table 22.1 Average Operating Costs

* Direct opex includes the direct costs of Mining, Processing and Administration.

** Royalties include a 2% DRC NSR royalty and 2.5% Gecamines gross income

A summary of the NPV (8%,$m), Free Cash Flow ($m) and IRR based on 100% of the Kipoi project (after tax and before financing structures) is provided in the Table 22.2

NPV (8%,$m)	Free Cash Flow ($m)	IRR (%)
$378	$679	**44%**

Table 22.2 Project Financial Model Outcomes

Tabulated sensitivities for the grid/diesel power generation option are provided in Table 22.3 and show that the two key drivers to the project are power cost and Cu price.

SENSITIVITY ANALYSIS					
LT Copper ($/lb)	2.00	2.50	3.00	3.50	4.00
NPV ($m)	233	326	418	509	601
IRR	39%	43%	47%	50%	52%
FCF (after tax) ($m)	408	579	745	912	1,079
Sulphuric Acid ($/t)	220	270	320	370	420
NPV ($m)	435	426	418	409	400
IRR	48%	47%	47%	46%	46%
FCF (after tax) ($m)	774	760	745	731	716
Power Price (c/kwh)	5	10	15	20	25
NPV ($m)	467	445	418	401	379
IRR	51%	49%	47%	46%	44%
FCF (after tax) ($m)	822	787	745	715	681
Capex (%)	-20%	-10%	0%	10%	20%
NPV ($m)	465	441	418	393	370
IRR	61%	53%	47%	41%	37%
FCF (after tax) ($m)	796	770	745	719	694
Copper Recovery (%)	-10%	-5%	0%	5%	10%
NPV ($m)	341	379	418	456	494
IRR	40%	43%	47%	50%	54%
FCF (after tax) ($m)	630	687	745	803	860
Mining Costs (%)	-10%	-5%	0%	5%	10%
NPV ($m)	432	425	418	411	403
IRR	47%	47%	47%	46%	46%
FCF (after tax) ($m)	769	757	745	733	721

Table 22.3 Project Financial Model Sensitivities

The financial outcomes of the DFS show a strong sensitivity to the copper price, a moderate to strong sensitivity to the power price and capital cost, and relative insensitivity to acid price and mining costs. The low sensitivity to acid price would also indicate a low sensitivity in general to the acid consumption characteristics of the ore.

23.0 ADJACENT PROPERTIES

Adjacent properties were not considered in the preparation of this report, nor is there any specific information in respect of adjacent properties known to TIGER.

Tiger is actively pursuing opportunities to increase landholdings within economic haulage distance of the central processing facility at Kipoi.

Potential also exists to add to the Mineral Resource at the 100%-owned Lupoto Copper Project just 25 km from Kipoi, where a maiden Mineral Resource was recently declared for the Sase Central deposit of 200,000t Copper contained. During 2013 Sase Central will be assessed for its potential to deliver supplemental feed to a central processing facility.

24.0 OTHER RELEVANT DATA AND INFORMATION

This section has been extracted from the Kipoi Copper Project Stage II Definitive Feasibility Study report by Arccon dated December 2012. Sources of information and diagrams have not been referenced individually.

24.1 Stage 2 Project Implementation

24.1.1 Human Resources

Of benefit to the Stage II development is that SEK has been in production in the DRC through the Stage I HMS at the Kipoi Copper Project since 2011, these operations will continue through until after commissioning of Stage II. Accordingly SEK already has an established management and operations presence in Lubumbashi and on site at Kipoi. SEK have already developed and has in place recruitment, training and all of the necessary human resources systems for continued operations.

24.1.2 Organisation Structure

A staff manning build up and organisational structure for the three phases of development has been generated, costs can be provided upon request. The management organisational structure at the completion of phase three is show in Figure 24-1 and Table 24.1. The planned total work force will number 368, which includes 30 expatriates.

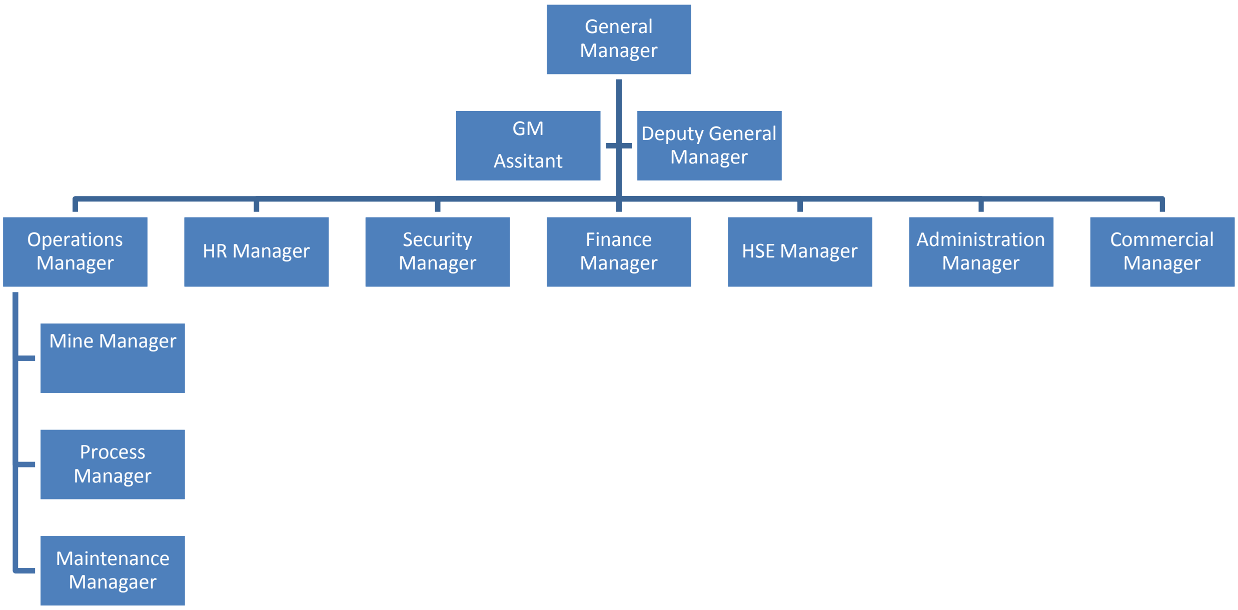

Figure 24-1 Kipoi Copper Project Stage II Phase 3 Organisational Structure - Management

Administration Management		**Plant Management**		**Mining & Geology Management**	
General Manager - Resident	1	Process Manager	1	Mining Manager	1
PA to the General Manager	1	Senior Metallurgist - Expat	2	Chief Geologist	1
Deputy General Manager	1	Senior Metallurgist - National	4	Senior Geologist	1
Chief Operating Officer	1	Production Superintendent	1	***Subtotal***	3
Subtotal	4	***Subtotal***	8		
Administration Department		**Plant Operations**		**Mining & Geology Department**	
Finance Manager	1	Production Supervisors	4	Surveyor	2
Accountant	1	Plant Leading Hands	4	Surveyor Assistant	4
Commercial Manager	1	Process Supervisors	4	Pit Technician	10
Finance Assistant	1	Heap Leach Operators	16	Mining Data Entry Clerk	2
Accounting Clerk	4	Control Room Operators	6	Geology Data Entry Clerk	2
Legal Manager	1	EW Operators incl Stripping Crew	16	Admin Assistants	2
HR Manager	1	Field Operators	30	General Labour	8
HR Clerk	3	Loader Operator	6	***Subtotal***	30
Safety Manager	1	Metallurgical Technicians	4		
Safety Officer	3	General Labour	20		
Environmental Manager	1	Laboratory Chemist	1		
Environmental Assistant	3	Laboratory Supervisor	3		
Secretary	2	Laboratory Technicians	8		
Document Translators	6	***Subtotal***	122		
IT Technicians	3	**Plant Maintenance**			
Logistics Manager	1	Maintenance Manager	1		
Logistics Clerk	11	Maintenance Superintendent	1		
Sales Manager	1	Mechanical Engineer	2		
Sales Clerk	5	Maintenance Supervisor	4		
Senior Security	5	Maintenance Planning Clerk	4		
Security Guards (Contract)	65	Fitters	8		
Security Police	10	Boiler Maker	8		
Administration Assistants	6	Electrician	6		
Subtotal	136	***Subtotal***	34		
TOTAL					337

Table 24.1 Phase 3 Organisation Staffing

During operations some of the project's administrative and general management functions will be carried out by staff at the Lubumbashi office.

The Operations Manager will have the responsibility of site production. Rosters will be arranged such that one of the General Manager or Operations Manager is always on site. Site administration functions, health safety and environmental functions including the site medical facilities, security, logistics and the catering contract will report to the General Manager, while Mining, Process Maintenance and operational Safety will report to the Operations Manager.

Accommodation, meals, laundry and office cleaning will be contracted to an experienced camp management services provider with the contract managed at site by the administration staff. The majority of the contractor's unskilled staff will be recruited from nearby communities and bussed to/from work.

Site security is managed by a security superintendent with four company shift security supervisors managing a contract security workforce of seven per shift. The security force will comprise registered police officers contracted from the police service and a special force of police officers will be armed.

24.1.3 Recruitment and Rosters

24.1.3.1 Expatriate Staff

Expatriate staff will fill a limited number of key positions in the operation and the key senior positions include:

- Chief Operations Officer
- General Manager
- Operations Manager
- Finance Manager
- Accountant
- Logistics Manager
- Commercial Manager
- Mine Manager
- Chief Geologist
- Chief mining Engineer
- Process Manager
- Senior Metallurgists (2)
- Production Superintendent

As a consequence of the JV with Gecamines the following senior positions will be held by Gecamines candidates:

- Deputy General Manager
- Commercial Manager
- HR Manager

There will be a requirement for training officers during commissioning of process plant and the expats will develop a train the trainer program with the local employees to upgrade their skills before and during early operations. The training of plant operations personnel has been allowed for in the pre-production capital allowances. All contractors will be responsible for providing training for their employees to a standard acceptable to SEK.

Recruitment will target experienced expatriate staff with a demonstrated ability to handle the cultural issues inherent with an operation of this type and with a proven ability and willingness to develop local staff. An ability to speak French will be well regarded in all candidates for expatriate positions

24.1.3.2 Congolese Staff

The Katanga province of the DRC has a long history of industrial scale mining activity. Operators, tradesmen and middle management personnel familiar with the types of equipment and processes to be employed at Kipoi are available in the area, although specific skills will need further development.

It remains SEKs' intent to provide salary and benefits packages commensurate with building the best available, competent, Congolese team without setting undue precedents within the industry.

SEK currently employs a total of approximately 170 Congolese personnel. These personnel will continue to be employed in the ongoing operations or, where appropriate, employed in new roles during construction and in the Stage II operation.

Notwithstanding the aim of always employing the 'right candidate for the job', candidates for operating positions will be ranked according to:

- Existing employment with the company
- Residents of nearby villages
- Residents of other centres in Katanga province
- Other Congolese nationals in order to provide maximum opportunities for residents of local communities.

Local hire will take due consideration of ethnic and tribal backgrounds preserving the current balance of employment with both Katanganese and other tribal groups. Religious backgrounds will be catered for in the recruitment and selection of staff and of course female employees will be catered for except where legislation prohibits employment of females.

24.1.3.3 Transitional Staffing

There will be a transitional period for the current operations Mining and Geology Staff and the Mining Contractor MCK, as Mining is likely to cease from late 2014 and not restart until early 2016. However during this period significant site construction earthwork activities will be undertaken under the direct management of SEK. These include

- Rehandle of the stockpiles to the HL
- all site base civil earthworks,
- Heap Leach Pads and Ponds,
- WSF and,
- TSF

It is envisaged that these staff will fulfil the necessary roles to allow for these activities to be undertaken providing both continuity of employment and also opportunity to develop additional operational and management skills.

It will be necessary for some of the Mining and Geology staff to fulfil roles in planning and development activities for the new Mining operations to ensure a seamless transition into the new phase of Mining at Kipoi for Stage II

24.1.3.4 Rosters and Working Conditions

All rosters and working conditions shall comply with national labour laws and regulations. Site accommodation, where offered, will be on a 'single status' basis only. All employees resident on site will be provided with three meals per day. Employees not resident on site will be provided with a meal at the commencement of, or during, their shift. These meals will be served at a dining room close to their workplace to avoid interruptions to operations.

Manning levels and operating costs for the plant has been kept flexible with 8 hour shift, 4 panel roster but the option of 12 hour shift, 3 panel rosters for 'round the clock operations. The adoption of 12 hour shifts has been considered as this has been implemented at other operations within the DRC. This will offer advantages to employees by providing extended 'off' periods for time with family and/or tending family farms. It also offers additional flexibility with transport and messing requirements. This will be negotiated with the necessary Government departments to ensure it meets local labour relations standards.

24.2 Project Execution

Arccon have been requested by SEK to carry out the DFS adopting a phased approach initially developed in the Scoping Study to, ultimately provide a 50,000 tpa hybrid Heap Leach/Agitated Leach/SXEW plant. The scheduled commissioning of Phase 1 in Q2 2014 will ensure a continued copper production after suitable feed material to the existing HMS Plant is depleted. SEK will provide project management, mining, plant operating and administration resources to the project to ensure a seamless transition to production.

The project development methodology selected for the Kipoi Copper Project Stage II will provide a mechanism for the transfer of a portion of the technical and schedule responsibilities to a competent and experienced engineering organisation (Engineer – EPCM). The construction contractors will carry the risk for most of the cost and schedule of the various contracting packages. It is critical for the success of such a contract that the Scope of Work (defined by the equipment and instrument list, layout drawings and process description) be well defined, so that the principal, contractors and EPCM Engineer, all have a clear understanding of the desired outcomes.

The construction schedule was developed, based on:

- Start of early engineering on 01 December 2012. Detailed engineering for some long lead items will start in the early engineering period.
- Target completion dates of:
- Phase 1 – Q1 2014
- Phase 2 – Q1 2015
- Phase 3 – Q1 2016

The schedule summary is shown in Figure 24-2

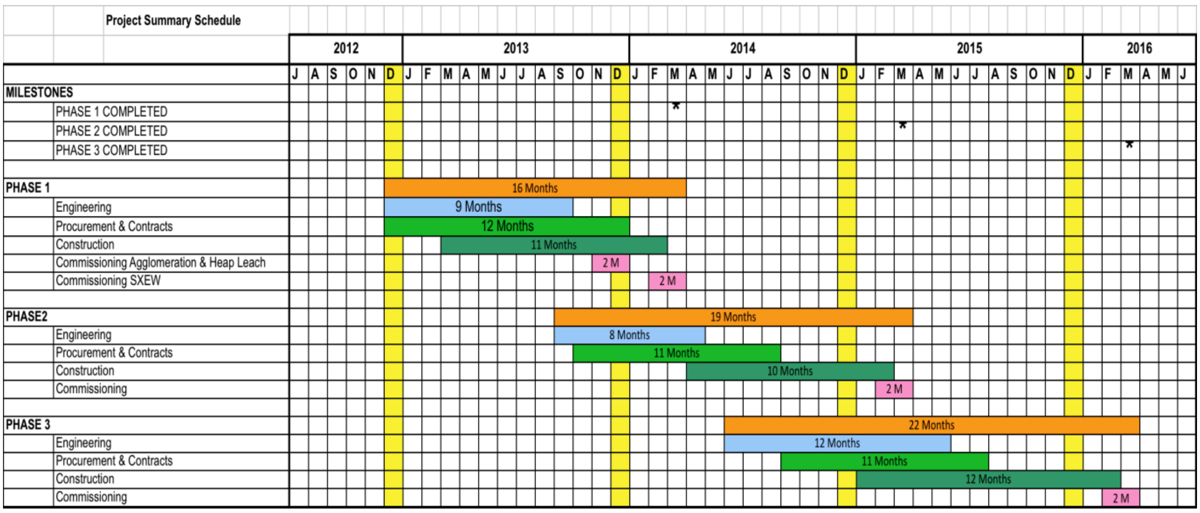

Figure 24-2Summary Project Execution Plan

24.2.1 Contracting Strategy

In order to minimise the overall project contract complexity, it is recommended that the number of contracts is to be kept to a minimum. The best security for the final outcome is provided by the "Lump Sum" type contract, however, this type of contract requires very accurate Scope of Work compiling, which may have a negative impact on the schedule.

The following contract packages are recommended:

Contract Description	*Contract Type*
• EPCM	Reimbursable

• Earthworks	Rates measurable
• HDPE Lining	Lump sum
• Concrete	Lump sum
• Structural/mechanical/piping	Lump sum
• Electrical/Instrumentation	Lump sum
• Transport and freight	Rates measurable
• Camp Services	Rates measurable
• Minor contracts (>$200K)	Various

Contracts Management begins with an overall basic project philosophy. All planning from conceiving project strategy, through to the stages of project approval and financing, to final design and procurement phases, are involved in developing the actual construction program into logical contract packages.

24.2.2 Project Organisation and Personnel

As per SEK instruction, the Kipoi project will be carried out on an Engineering, Procurement, and Construction Management (EPCM) basis.

For the purposes of checks, balances, progress monitoring, regulatory guidance and quality assurance, SEK will have a Project Management team acting as a liaison with the EPCM contractor and the rest of the SEK organisation.

SEK will manage approximately 60% of the capital expenditure of the project. The SEK project management team will manage activities such as site accommodation, roads, power supply, diesel supply, logistics, import duties, customs clearance and management.

The EPCM team will be led by a Project Manager who has the responsibility for the overall direction of the EPCM portion of the Kipoi Project. The Project Manager will be supported by a multi-disciplinary management team that has had experience on similar projects in Africa Figure 24-3

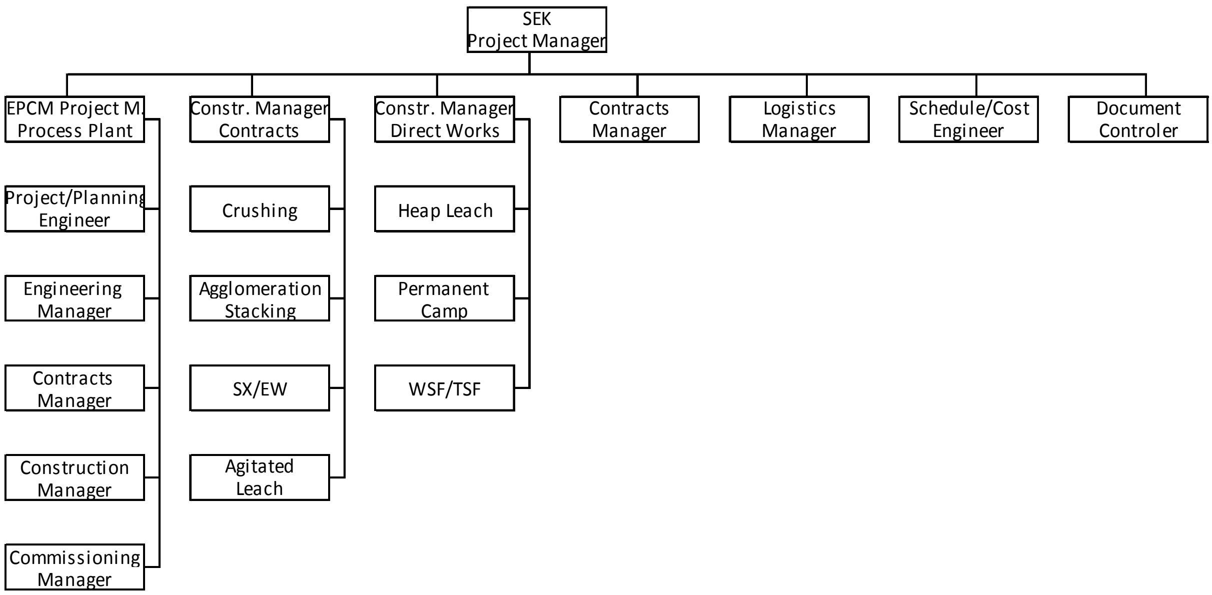

Figure 24-3 Project Management Organisational Chart

24.2.3 Health and Safety Plan

HSE planning should start at early stages of the project i.e. basic engineering design to ensure that the world best HSE practices are embedded at all levels of the project.

The Health and Safety Plan facilitates an atmosphere between the stakeholders to work with accident prevention policies like:

- minimising unsafe conditions; accidents are usually caused by unsafe physical condition of equipment or mechanical exposure to the working environment
- minimising of unsafe acts by providing proper supervision to ensure that workers are using the proper techniques and methods in accordance with H&S Plan
- taking advantage of every opportunity to correct unsafe acts or conditions before an injury occurs.

24.2.4 QA/QC

QA will require SEK and the EPCM Contractor to set broad guidelines in terms of plant operability, safety of operation, and adherence to all regulatory requirements, including environmental, safety, health, and welfare of employees during all project phases. A strong policy will be implemented for all project participants, from suppliers to design engineers, contractors, and individual company employees. Each and every contract, PO, agreement, public statement, public or site meeting, and official project announcement will reiterate this policy.

The Project Quality Plan will provide a list of engineering, procurement, and construction activities that will be audited to ensure that the objectives of the QA/QC are achieved.

24.2.5 Cost Management

Cost Control System (CCS) will monitor and control all the project costs and will accurately record and report all costs.

To monitor the project, a Project Budget has to be established and transferred on to the CCS system.

The direct costs are transferred directly from the estimate. Indirect costs and hours are entered against the labour and expenses codes.

24.2.6 Reporting

To ensure that the Project costs and progress are monitored and tracked efficiently and correctly, the Project Execution Plan (PEP) must stipulate the exact manner in which the reporting is formulated.

EPCM Project Manager and SEK Project Manager must decide what level of reporting, beyond the minimum standards, is required for the Kipoi Project.

It is recommended, that aside from any internal or external Audit Reports, a 'Monthly Report' forms the central part of the Kipoi Project's reporting.

24.2.7 Procurement and Contracts

24.2.7.1 Purchasing

The procurement and contracts officers will be responsible for putting together tender packages, adjudicating completed tenders and placing orders/contracts.

Design engineers will be responsible for production of the equipment specifications for all items to be purchased and for technical evaluation of the subsequent bids. Additionally engineers will be required to provide contract specifications and be involved in the assessment of contract bids.

24.2.7.2 Contract Administration

The EPCM Project Manager is responsible for:

- Ensuring all contracts operate within the requirements of their Head Contracts
- Ensuring that appropriate contract personnel are embedded into the project.
- Providing contract advice and assistance to contract personnel.
- Developing and continually improving contract processes.

Each contract deliverables must be identified.

24.2.7.3 Construction Plan

Construction Management begins with an overall basic EPCM project philosophy. All planning from conceiving project strategy through to the stages of project approval and financing to final design and procurement phases are involved in developing the actual construction program into logical consulting, technical, service, equipment supply, and construction contract packages.

Construction Manager will have overall responsibility for the Kipoi site. His team shall consist of OH&S&E Officer, Discipline Supervisors, Site Engineers and Administration personnel.

The Construction Manager shall manage all site activities that will include:

- Site establishment and ongoing site administration.
- Site accommodation.
- Site Safety Management and Environmental Management.
- Site Management and Supervision for all contractors and disciplines including; earthworks, civil works, structural installations, mechanical installation works, piping, electrical and instrumentation works.
- Management of onsite programme.
- Management and onsite cost control.
- Reporting.
- Site co-ordination between all Contractors.

24.2.7.4 Logistics and Materials Movement

The remote location of the Project site, plus the high cost to transport material, equipment, fuel and personnel to the job site, dictate that strict transportation controls be planned, established and maintained.

The scope of the Logistics Plan provides for and encompasses the services necessary for the efficient transport, warehousing and marshalling all materials and equipment required to construct the facilities. The objective of the Logistics Plan is to ensure that equipment; materials and materiel are transported to the Project site in a safe, efficient, economical, and timely manner, to meet construction schedules.

24.2.7.5 Logistics Plan Basis

Most goods will originate in South Africa or be shipped via the South African port of Durban. The goods will be transported to the Kipoi site by road transport. Most goods will be consolidated and loaded on to trucks in a consolidation yard in Johannesburg.

It is estimated that the Kipoi Project will have approximately 20,000t of process and mobile equipment, structural steel and other materials.

It is anticipated that approximately 80% of the goods will originate in South Africa with the remainder being shipped from other parts of the world. Construction steel is anticipated to come from South Africa and be transported to site by road transport in suitable bundles.

Goods arriving at the Kipoi site will be recorded on arrival and the laydown location duly noted on the receiving documents. Reports will be updated on a daily basis, indicating the PO number, a description of the goods received, and the location of the goods stored. The reports will be issued to the Construction Manager at site.

Goods originating from outside South Africa will be shipped to Durban for trans-shipment to site.

24.3 Overview of the Democratic Republic of Congo

24.3.1 General

The DRC (formerly Zaire) is located in west-central Africa and is the third largest country in Africa (2.3 million sq km), similar in size to Western Europe, and with a population of approximately 65 million. The capital of the country is Kinshasa, which is located in the north-west of the country on the Congo River. The Congo River provides extensive access to the interior of the country.

The DRC held the first democratic elections during 2006 and held the next national/presidential elections on the 28th of November 2011.

24.3.2 Current Political Situation

Presidential and parliamentary elections, the first elections in 40 years, were held in the DRC on July 30, 2006 under the guidance of the European Union Electoral Observer Mission and MONUC, the United Nations mission to the DRC.

The second democratic elections in the history of the DRC were held in November 2011, and resulted in in Joseph Kabila returned to office as President. It is commonly expected that the democratic elections will enhance the DRC business climate by reducing the country's political risk and that significant new foreign investment in the natural resources sector will begin to flow into the DRC in the near-term.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Stage 2 DFS

The DFS was prepared by engineering consultants Arccon (WA) Pty Ltd, incorporating input from other specialist consultants, Cube Consulting Pty Ltd (Geology, Resources and Reserves), Worley Parsons Pty Ltd (Geotechnical, Tailings Dam, water dam and site hydrology) and DRC Green Mining and Engineering (Environmental and Sustainable development planning).The DFS objective was to demonstrate the economic viability and commercial exploitability with sufficient technical confidence to meet international standards of the Kipoi project area deposits. The DFS has been assessed to have an accuracy of -5% and +15%. The DFS provided capital costs and operating cost estimates for the evaluation of developing a Stage 2 facility at the Kipoi Copper Project with a SXEW plant circuit incorporating two separate 25,000tpa SXEW trains to be commissioned sequentially, based on:

- Mining schedule–pit optimisations and mining schedules developed by Cube
- Processing plant – flow sheet design and major equipment selection for processing of Stage 1 HMS residues and mined ore from Stage 2 mining schedule
- Tailings dam – design and costing by Worley

25.1.1 Mineral Resources

With respect to the Mineral Resources estimated at the Kipoi Copper Project, CSA Global and Cube have concluded that the geological interpretation for geology, weathering and mineralisation domains at Kipoi Central, Kileba and Kipoi North are adequate for the estimation of the Mineral Resources as defined.

The technical systems adopted by SEK at the Project for resource definition are considered by Cube to be to industry standard. These include:

- Drilling equipment and method;
- Geological logging and core sampling;
- Bulk density determinations;
- Use of certified standards and assay blanks as control samples in the sample stream to monitor QAQC trends, and
- Technical data and QAQC storage in an Access database.

SEK utilising rigorous drilling methods have mitigated the risks associated with core loss. Cube has examined the effects of core loss on sample grades in nearby holes and concludes that the risk of overestimating metal in high core loss areas is low.

Cube recommends that QAQC reports and reconcilaition be regulary updated for the Kipoi Copper Project to reflect the ongoing grade control. In addition, Cube recommends that umpire analyses commence at an independent assay laboratory on a routine basis.

During 2012 SEK has completed the drilling of the Kipoi Central Deposit, Kipoi North deposit and the Kileba Deposit. Cube Consulting Pty Ltd (Cube) has been commissioned the review the drilling and associated resource definition works to ensure that international standards are met. Further numerous site visits have been conducted where effort has focused on confirming the findings of the SEK geological team.

The resource drilling results were compiled by CSA Global Pty Ltd then verified and returned to SEK staff prior to forwarding to Cube for the mineral resource estimation to be completed. Cube has been involved with the resource estimation of the Kipoi deposits since 2009 and has been auditing the grade control activities since commencement of operations. Cube knowledge of the deposits is second only to SEK geological staff.

As drilling was completed in each deposit Cube has been preparing mineral resource estimations. The following tables Table 25.1, Table 25.2 and Table 25.3 detail the mineral resource estimations completed and used the DFS.

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
	Oxide	0.0	0.0	0	0.0	**0.0**
Measured	Transitional	0.1	1.5	1	0.0	**0.0**
	Sulphide	0.1	2.4	3	0.1	**0.1**
	Total	0.2	2.0	4	0.1	**0.1**
	Oxide	10.0	1.2	124	0.1	**6.3**
Indicated	Transitional	4.8	1.5	73	0.1	**3.0**
	Sulphide	4.6	2.3	109	0.1	**2.8**
	Total	19.4	1.6	306	0.1	**12.1**
	Oxide	10.0	1.2	124	0.1	**6.3**
Measured +	Transitional	4.9	1.5	74	0.1	**3.0**
Indicated	Sulphide	4.7	2.3	112	0.1	**2.9**
	Total	19.6	1.6	310	0.1	**12.2**
	Oxide	4.2	1.0	42	0.1	**4.5**
Inferred	Transitional	1.1	1.0	12	0.1	**1.1**
	Sulphide	2.6	1.1	28	0.1	**3.5**
	Total	7.9	1.0	82	0.1	**9.1**

Table 25.1 Stage II Kipoi Central Mineral Resource Tabulation > 0.5% Copper, April 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Indicated	Oxide	6.0	1.46	87.0	0.06	**3.4**
	Transitional	2.1	1.60	33.2	0.05	**1.0**
	Sulphide	0.5	1.43	8.0	0.04	**0.2**
	Total	8.6	1.49	128.2	0.05	**4.6**
Inferred	Oxide	0.7	0.81	6.1	0.04	**0.3**
	Transitional	0.5	0.78	3.6	0.04	**0.2**
	Sulphide	1.0	1.75	17.7	0.04	**0.4**
	Total	2.2	1.23	27.4	0.04	**0.9**

Table 25.2 Total Kileba Mineral Resource Tabulation > 0.5% Copper, August 2012

Classification	Category	Tonnes (mt)	Copper (%)	Copper (000't)	Cobalt (%)	Cobalt (000't)
Indicated	Oxide	3.4	1.36	46.1	0.05	**1.6**
	Transitional	0.5	1.21	6.4	0.03	**0.2**
	Sulphide	0.1	1.05	1.0	0.04	**0.0**
	Total	4.0	1.33	53.5	0.05	**1.8**
Inferred	Oxide	0.4	1.20	4.1	0.04	**0.2**
	Transitional	0.4	1.06	3.9	0.03	**0.1**
	Sulphide	0.3	1.05	3.6	0.03	**0.1**
	Total	1.1	1.10	11.6	0.03	**0.4**

Table 25.3 Total Kipoi North Mineral Resource Tabulation > 0.5% Copper, November 2012

25.1.2 Mineral Reserves and Mine Plan

The Stage 2 SXEW Mineral Reserves are a combination of existing stockpiles resulting from the Stage 1 HMS operations being rejects stockpiles, medium grade stockpiles and in-pit Mineral Reserves all with demonstrated economic viability. The information below is provided by SEK mining personnel.

The stockpiles and Stage 1 HMS rejects are Mineral Reserves and have been classified as Probable Mineral Reserves and are either on stockpiles or exist in the Stage 1 pit as Mineral Reserves to be mined and placed on the stockpiles over the next 18 months.

These Probable Mineral Reserves contain 137,400 tonnes of copper and will be fed to the SXEW plant prior to the commencement of mining approximately two years after processing begins. The stockpiles have been estimated by SEK.

The Mineral Resources stated above were subject to economic assessment using an open pit mining strategy. Cube completed the analysis using current operating cost parameters from the existing operations and processing parameters provided by Arccon who were the overall managers of the DFS. The following Table 25.4 presents the results from the development of Probable Mineral Reserves from the Mineral Resources stated above and the stockpiled Mineral Reserves.

Mineral Reserves	Classification	Tonnes (Mt)	Copper %	Copper (000't)
Kipoi Central	Probable	15.5	1.20	186
Kileba	Probable	5.2	1.87	98
Kipoi North	Probable	1.2	1.94	24
SUBTOTAL [1]	Probable	21.9	1.41	308
Kipoi Central Stockpiles [2]	Probable	4.9	2.80	137
TOTAL	Probable	26.8	1.66%	445

Table 25.4 Total Reserves for the Kipoi Stage 2 SXEW Project

[1] – Competent person for this sub-total is Quinton de Klerk

[2] – Competent person for the stockpile material is David Readett.

Pit optimisation studies were undertaken on the three principal deposits, namely Kipoi Central, Kipoi North and Kileba based on the following input parameters:

- Copper Price: US$2.62/lb
- Mining Costs: as per current mining contract
- Pit Slopes: minus 30° to 33 °
- Metallurgical Recovery: 85% based on 83% recovery from heap leach and 90% recovery from tank leach.

The remainder of the input parameters have been taken directly from current operations at Kipoi. All inferred oxide, transitional and primary mineralisation was assigned zero recovery for purposes of the mine optimisation and thus excluded from the Mineral Reserves. The mining schedule was developed to maximise early cash flow thus improving the NPV and IRR. The following Table 25.5 and Figure 25-1 presents the mining production schedule. Noting that mining commences in 2016 while stockpiled plant feed will commence during Q2-2014.

Deposit	Ore Type		2016	2017	2018	Year 2019	2020	2021	2022	Total
Kipoi Central	Oxide 1	Ore (t)	73,560	674,486	1,121,988	3,578,416	1,523,231	352,980		7,324,662
		Cu (t)	505	4,918	12,442	39,492	18,753	6,184		82,293
	Oxide 2	Ore (t)			332,825	612,496	1,936,748	1,608,621	372,962	4,863,653
		Cu (t)			2,119	4,809	17,504	16,236	4,575	45,242
	Transition	Ore (t)			130	65,795	766,262	1,394,632	580,861	2,807,680
		Cu (t)			3	1,107	15,041	29,490	8,919	54,560
KC Satellite	Oxide	Ore (t)				53,759	285,725	144,339		483,823
		Cu (t)				409	2,457	1,364		4,230
Kipoi Central Total		Ore (t)	73,560	674,486	1,454,943	4,310,466	4,511,967	3,500,572	953,824	15,479,818
		Cu (t)	505	4,918	14,563	45,817	53,755	53,274	13,494	186,326
Kileba	Oxide 1	Ore (t)	29,542	224,148	169,847	5,419				428,955
		Cu (t)	499	4,163	5,469	194				10,325
	Oxide 2	Ore (t)	1,348,133	1,944,329	758,221	5,460				4,056,143
		Cu (t)	16,338	34,663	15,376	117				66,494
	Transition	Ore (t)	0	11,036	505,715	231,945				748,696
		Cu (t)	0	216	13,721	7,016				20,954
Kileba Total		Ore (t)	1,377,675	2,179,513	1,433,782	242,824				5,233,794
		Cu (t)	16,836	39,042	34,566	7,328				97,773
Kipoi North	Oxide 1	Ore (t)						342,604	541,164	883,768
		Cu (t)						7,259	10,812	18,071
	Oxide 2	Ore (t)						106,346	237,216	343,562
		Cu (t)						1,486	4,269	5,754
	Transition	Ore (t)						0	3,337	3,337
		Cu (t)						0	77	77
Kipoi North Total		Ore (t)						448,950	781,717	1,230,667
		Cu (t)						8,744	15,158	23,902
Mine Total		Ore (t)	1,451,235	2,853,999	2,888,725	4,553,290	4,511,967	3,949,522	1,735,540	21,944,279
		Cu (t)	17,341	43,960	49,129	53,145	53,755	62,018	28,652	308,001

Table 25.5 Mining Schedule for the Stage 2 SXEW Project Plant Feed Material

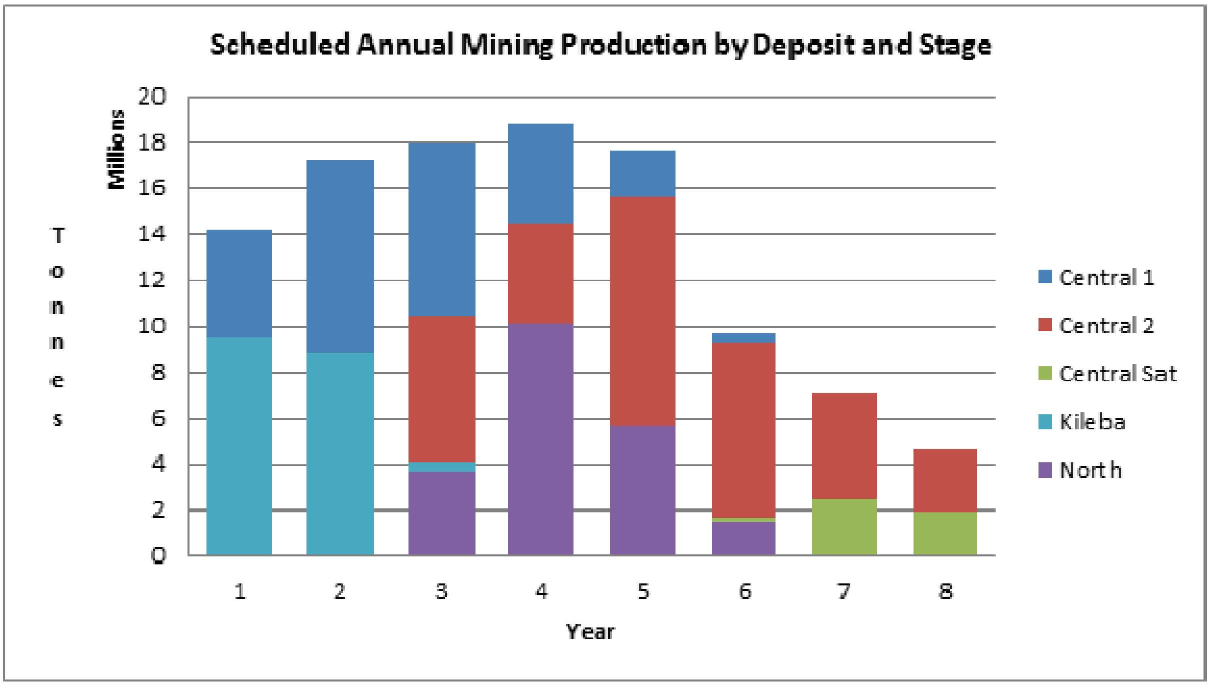

Figure 25-1 Scheduled Annual Mining Schedule by Deposit and Phase starting in 2016 after the HMS stockpiles have been depleted.

25.1.3 Processing

The processing facility will be a conventional solvent extraction electrowinning (SXEW) processing plant capable of 50,000t per annum copper cathode production through two parallel 25ktpa SXEW trains (Figure 25-2).

Plant feed will be crushed and washed to separate the +0.3 mm fraction from the slimes and the fines. The +0.3 mm fraction will be sent to heap leach pads where recoveries are anticipated to be 83%of contained copper while the slimes and fines will be directly fed to a tank leach system where the anticipated recoveries will range from 88% to 90%.

This split processing system allows flexibility in the process pathway offering options for high, medium and low grade ores. The HMS generates streams of feed material available for processing in Stage 2; 1.5Mt floats at 3% Cu, 0.9Mt slimes at 3% Cu and 2.4Mt medium grade at 2.6% Cu.

The plant feed schedule Table 25.2 will allow the HMS stockpile of the float rejects to be processed through the heap leach facility followed by the medium grade stockpile mined during the Stage 1 HMS operation. The tank leach facility will be commissioned in the first half of 2016, with the slimes processed through the tank leach facility.

Ore Stacked	1/01/14	1/01/15	1/01/16	1/01/17	1/01/18	1/01/19	1/01/20	1/01/21	1/01/22	Total
HMS Floats	867,915	732,085								
HMS Fines				540,000	393,000					
Medium Grade - HL		757,902	852,098	-	-					
Medium Grade - AG			690,000	-	-					
Kipoi ROM - HL			61,717	565,894	1,241,002	3,658,307	3,934,904	3,069,014	833,464	
Kipoi ROM - AG			11,843	108,592	180,659	614,794	577,063	431,558	120,359	
Kipoi North - HL								448,950	633,308	
Kipoi North - AG									148,408	
Kileba - HL			967,652	1,550,539	1,022,501	170,578				
Kileba - AG			410,023	628,973	411,282	72,246				
Heap Leach Feed	867,915	1,489,987	1,881,467	2,116,433	2,263,502	3,828,885	3,934,904	3,517,964	1,466,773	21,367,830
Agitated Leach Feed			1,111,866	1,277,566	984,940	687,039	577,063	431,558	268,768	5,338,801
Cu Grade	3.0%	2.8%	1.9%	1.8%	1.9%	1.2%	1.2%	1.6%	1.7%	
Contained Copper	19,094	48,611	57,436	60,160	60,707	52,218	53,755	62,018	28,752	442,751
Recovery	90%	90%	87%	83%	82%	86%	85%	83%	81%	85.1%
Recovered Copper	17,185	43,750	50,010	49,992	49,852	45,103	45,960	51,570	23,192	376,614

Table 25.6 Plant Feed and Production schedule for Stage 2 SXEW Project

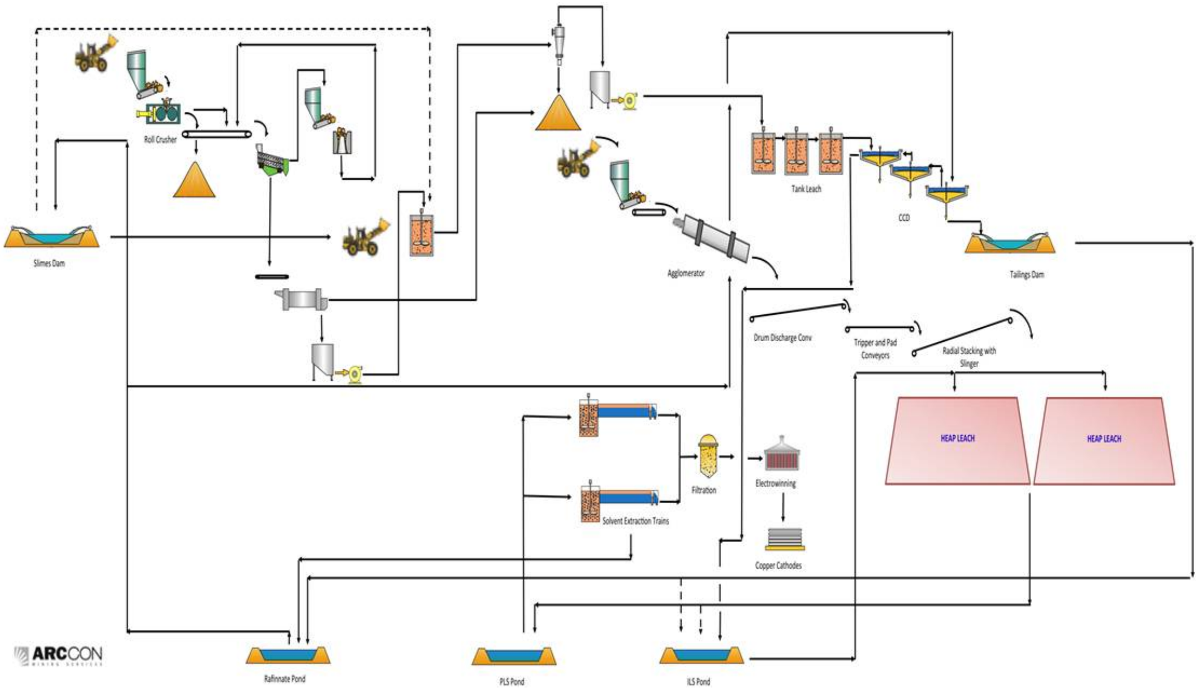

Figure 25-2 Process Plant Final Flowsheet

Capital Costs

Costs are estimated to an accuracy of +15% and -5% including contingency, are unescalated, including import duties and are expressed in US dollars.

The breakdown of costs below Table 25.7 demonstrates $160.9 million of cost to first production with a total LOM capital cost of $385.2million, including sustaining capital. The capital cost has been phased over the three phases of development of the Stage 2 SXEW development. The phases are defined as follows:

- Phase 1: 25,000tpa SXEW infrastructure and stockpile management
- Phase 2: second 25,000tpa SXEW and crushing circuit
- Phase 3: 1.0Mtpa tank leach circuit

Description	Phase 1	Phase 2	Phase 3	Total
General and Buildings	35,841,181	13,977,738	13,767,339	**63,586,258**
Crushing	1,723,201	15,459,869	1,888,898	**19,071,968**
Agglomeration & Stacking	21,258,744	5,815,128		**27,073,872**
Leaching	371,128			**371,128**
CCD		171,110	11,414,294	**11,585,404**
Tailings Disposal		28,845	533,434	**562,279**
Solvent Extraction	6,245,904	3,338,770	419,404	**10,004,079**
Electrowinning	26,684,821	21,676,452	220,774	**48,582,047**
Reagents	3,372,789	1,292,016	164,999	**4,829,804**
Services	2,193,736	165,337	38,058	**2,397,131**
First Fill & Spares	2,128,618	1,522,857	433,036	**4,084,511**
Indirect Construction Costs	9,931,680	4,445,505	1,888,373	**16,265,557**
Commissioning	2,209,306	1,270,813	1,149,000	**4,629,119**
SUBTOTAL	111,961,107	69,164,442	31,917,608	**213,043,157**
EPCM	18,780,711	10,244,024	5,122,012	**34,146,748**
Contingency	11,564,120	7,001,364	3,287,822	**21,853,306**
Owner's Costs	7,538,700	4,354,350	4,104,530	**15,997,580**
Custom Duty	918,934	592,150	268,091	**1,779,175**
Other Import Duties				
Value of Total Imports				
BARE COSTS	150,763,573	91,356,330	44,700,063	**286,819,966**
Additional Capital				
WSF Phase 1	4,023,441			**4,023,441**
WSF Phase 2		8,090,625		
Tiger Permanent Camp	6,110,797	4,073,864		**10,184,661**
HV Upgrade		8,693,716		**8,693,716**
HV Power Line & Substations		12,820,090		**12,820,090**
Tailing Pipeline (2.5 km)			401,824	**401,824**
Tailing Return Water Pipeline			327,981	**327,981**
TSF (Stage 1)			24,660,390	**24,660,390**
TOTAL PROJECT COST	160,897,810	125,034,625	70,090,258	**356,022,694**
Deferred Capital				
Heap Leach incl. Piping (Year 3)			13,338,655	**13,338,655**
Relocation of Railway Line				**1,643,250**
Closure Cost				**12,500,000**
TOTAL DEFERRED CAPITAL				**27,481,915**
TOTAL LOM PROJECT COST				**383,504,599**

Table 25.7 Capital Cost Estimate for Phase 1, 2 and 3

Operating Costs

Costs are estimated to an accuracy of + 15% - 5%, are unescalated, exclusive of duties and taxes and expressed in US dollars.

The operating costs will be $0.72/lb during the initial two years of operations, during which the benefit of treating available leach stockpiles from the Stage 1 HMS operation will be realised. Thereafter, the slimes stockpiles and run-of-mine (ROM) material will be processed at an average operating cost of $1.29/lb. The average LOM site cash operating cost is US$1.13/lb. Table 25.8.

The low gangue acid consumption of the Kipoi deposits, coupled with the low cost of electricity, results in process operating costs considered to be within the lowest quartile of industry standards.

COST CENTRE	Phase 1		Phase 2		Phase 3	
	$/t ore	$/lb of Cu	$/t	$/lb of Cu	$/t	$/lb of Cu
Mining & Geology Labour	$1.54	$0.03	$0.77	$0.020	$0.45	$0.02
Contract Mining	$0.00	$0.00	$1.50	$0.039	$13.60	$0.53
Total Mining Costs	**$1.54**	**$0.03**	**$2.27**	**$0.059**	**$14.05**	**$0.55**
Power	$19.82	$0.44	$8.24	$0.215	$5.53	$0.21
Reagents	$3.97	$0.08	$2.97	$0.078	$5.87	$0.23
Process Plant Labour	$6.56	$0.13	$4.37	$0.114	$2.33	$0.09
Plant Maintenance & Consumables	$3.21	$0.06	$2.68	$0.070	$1.71	$0.07
Laboratory	$0.30	$0.01	$0.21	$0.005	$0.39	$0.02
Mobile Equipment (incl Diesel & Mtce)	$1.05	$0.02	$0.71	$0.018	$0.54	$0.02
Total Processing Costs	**$34.92**	**$0.74**	**$19.18**	**$0.500**	**$16.37**	**$0.64**
Administration Labour	$1.31	$0.03	$2.19	$0.057	$1.20	$0.05
General & Administration Expenses	$0.01	$0.03	$2.65	$0.069	$1.58	$0.06
Total Admin Costs	**$1.32**	**$0.05**	**$4.84**	**$0.126**	**$2.78**	**$0.11**
TOTAL OPERATING COSTS	**$37.78**	**$0.83**	**$26.29**	**$0.686**	**$33.19**	**$1.29**

Table 25.8 Operating Direct Cash Cost Summary

The following Table 25.9 details the average operating costs over the life of the mine including costs for delivery of product to market, depreciation amortisation and royalties.

Direct Opex* ($/lb)	Transport + Export costs ($/lb)	C1 ($/lb)	Depreciation Amortisation ($/lb)	Royalties ($/lb)	Total Cost C1+C2 ($/lb)
$1.13	$0.26	$1.39	$0.46	$0.12	$1.98

Table 25.9 Average Operating Costs

Note: The above costs do not assign any benefits or credits from by-products, export discounts; freight delivery credits etc. as they vary will from time to time and generally currently are approximately $0.10/lb

25.1.4 DFS

The DFS was prepared using the expected capital and operating costs shown above. Modelling incorporates fiscal aspects of the DRC mining laws and conventions applicable to the Kipoi project, including:

- 30% DRC corporate tax rate
- 2% DRC state net smelter return royalty
- 3% import duties,
- 60% depreciation rate of capital expenditure (in year of occurrence and straight line thereafter)
- 2.5% Gecamines gross income royalty

A financial model was developed for a base case scenario using a copper price forecast of US$3.40/lb (2014-2017) and US$3.00/lb (2018 onwards). The results are shown in Table 25.10, together with the results of upside cases using copper prices of $3.50 and $4.00 to demonstrate a measure of the sensitivity of the project economics to copper prices.

Copper price	IRR	Net Free Cashflows	NPV (8%)	Payback (Initial Capital)
US$/lbCu	(%)	US$M	US$M	Months
Base Case	44	680	378	16
3.50	49	860	483	16
4.00	62	1,135	659	15

Table 25.10 Summary of Results

The above financial analysis excludes costs related to exploration, feasibility, financing and interest charges, no benefit has been attributed for the value remaining in the HMS project.

Project Implementation and Timing

The DFS provides guidance for the development period of the project, the Stage 2 SXEW project will take 40 months for all three Phases to be completed. The Stage 2 Phase 1 will be completed within 16 months from commencement. Phase 2 has a duration of 19 months while phase 3 is planted to take 22 months. There is some overlapping of these schedules such that all development works can be completed within 40 months.

Project Opportunities – Exploration Upside

The biggest impact on the Kipoi project value is likely to be achieved through increasing the Mineral Resource base available as feed to the Kipoi infrastructure, which has the potential to increase the mine life and/or annual plant throughput. Tiger is therefore committed to intensive exploration programmes.

Tiger is actively pursuing opportunities to increase landholdings within economic haulage distance of the central processing facility at Kipoi.

Potential also exists to add to the Mineral Resource at the 100%-owned Lupoto Copper Project just 25 km from Kipoi, where a maiden Mineral Resource was recently declared for the Sase Central deposit of 200,000t Copper contained. During 2013 Sase Central will be assessed for its potential to deliver supplemental feed to a central processing facility.

26.0 RECOMMENDATIONS

26.1 Kipoi Copper Project Exploration Budget

The current resource models provide robust global estimates of the in situ remaining Cu and Co mineralisation in the Kipoi Copper Project Mineral Resources.

The current on-going exploration is focused at Judeira and has included soil sampling and trenching and is aimed at identifying anomalies to be drilled later in the year. This drilling would be aimed at increasing the resources at Judeira, that will be available for processing at the Kipoi SXEW.

It is not currently intended to drill beyond the current depth at the Kipoi Central, Kipoi North and Kileba deposits, as the base of oxidation has been reached. Whilst there is potential for strike extensions, the resources identified to date, with the exception of Judeira, are considered sufficient for the development of Stage 2 of the Kipoi Project.

Drilling, sampling, assay and QAQC methods were described in detail in previous reports. Recommendations from previous resource modelling that still stand include the complete incorporation of sampling and assaying and QAQC data from historical databases. As recommended by Cube QAQC reports are regularly updated for the Kipoi Copper Project as further drilling takes place and umpire analyses are being undertaken at a second independent assay laboratory.

Recommended work programs and cost breakdowns for exploration and resource development are summarised in Table 26.1 below.

Prospect	Program Cost	Timing	Work description
Judeira	$1.1 Million	2013	Exploration drilling

Table 26.1 Summary of Exploration and Resource Upgrade Budget Expenditure

27.0 REFERENCES

Binda, P.L. and Mulgrew, T.R. (1974). Stratigraphy of copper occurrences in the Zambian Copperbelt, in Bartholome, P.,éd., Gisements stratiformes et provinces cuprifères: Liège, Soc. Geol. Belgique, 180-201.

Cailteux, J.J. (1976). Corrélation stratigraphique des sediments de âge Roan du Shaba et de Zambie. Soc. Geol. Belgique, Annales, 99, 31-45.

Cailteux, J.J. (1978). Particularités stratigraphique et pétrographiques du faisceau inférieur du groupe des mines au centre de l'arc cuprifère Shabien. Annales de la Société Géologique de Belgique 100, 55-71.

Cailteux, J.J. (1983). Le Roan Shabien dans la région de Kambove (Shaba-Zaïre). Thèse, Liège.

Cailteux, J.J. (1994). Lithostratigraphy of the Neoproterozoic Shaba-type (Zaire) Roan Supergroup and metallogenesis of associated stratiform mineralisation. Journal of African earth sciences 19, 279-301.

Cailteux, J.L.H, Kampunzu, A.B., Lerouge, C., Kaputo, A.K. and Milesi, J.P. (2005). Genesis os sediment-hosted stratiform copper-cobalt deposits, Central African Copperbelt, Journal of African Earth Sciences, v42, pp. 134-158.

Demesmaeker, G, Francois, A. andOosterbosch, R. (1963). La tectoniquedes gisements cuprifères stratiformes du Katanga, in Lombard, J., and Nicolini, R., eds., Gisements stratiformes de cuivre en Afrique, Paris, Assoc. des Services Gëbl., 47-115.

De Magnee, I. and Francois, A. (1988). The origin of the Kipushi (Cu,Zn,Pb) Deposit in direct relation with a Proterozoic salt diapir; Copperbelt of Central Africa, Shaba, Republic of Zaire; In: Friedrich, G.H. and Herzig, P.M. (editors); Base metal sulfide deposits in sedimentary and volcanic environments. Special Publication of the Society for Geology Applied to Mineral Deposits. No. 5; pp 74-93.

Francois, A. (1973). Stratigraphie tectonique et minéralisations dans l'arc cuprieferes du Shaba, in Bartholomé', P., éd. Gisements stratiformes et provinces cuprifères: Liège, Centenaire Soc. Gé"ol. Belgique, 79-101.

Katekesha, M. (1975). Gisement cupro-cobaltifère de Kamoto Principal (Shaba, Zaïre). Thèse, Liège.

Lefebvre, JJ. (1976). Phénomenes post-diagénétiques dans l'écaille nord-est du gisement de Kabolela, Shaba Zaire. Bulletin de la Société belge de Géologie 85, 7-29.

Lefebvre, JJ. and Cailteux, J. (1975). Volcanism et minéralisations diagénétiques dans le gisement de l'Etoile, Shaba, Zaire. Annales de la Société Géologique de Belgique 98, 177-195

Lefebvre, A. and Tshiauka, T. (1986). Lgrouped esm inesd Lubembe (Shaba Zare). Soc. G6ol. Belg., Annales 109,557-571.

Oosterbosch, R. (1950). La serie des mines dans le polygone de Fungurume. Comptes rendus du congrès scientifique. Elisabethville. Travaux de la commission géographique et géologique, volume II, tome I. Communincation n 14.101-118

Oosterbosch, R. (1951). Copper mineralisation in the Fungurume region. Economic Geology 46, 121-148.

Tsiauka, T., Katekesha, W.M., Cailteux, J., Intiomale, M.M., Kampunzu, A.B. Kapenda, D., Chabu, M., Ngongo, K., Mutombo, K. and Nkanika, W.R. (1995). Sous presse – Lithostratigraphy of late Proterozoic Katanga sedimentary sequences in the Musoshi Copper District (SE Shaba, Zaire) and incidences on copper and cobalt economic geology in Central Africa. Prec. Research.

28.0 DATE AND SIGNATURE PAGE

28.1 Certificate of the Qualified Person

Mark Zammit

I, Mark Zammit, do hereby certify that:

I am an employee (Principal Consultant Geologist) with Cube Consulting Pty Ltd, 1111 Hay Street, West Perth 6005, Western Australia.

I am a QP who has co-authored of the technical report titled "Independent Technical Report (NI43-101), Kipoi Copper Project Stage 2 DFS Democratic Republic of Congo" (the "Technical Report") dated 22nd February 2013 relating to Tiger Resources Limited. I graduated with a Bachelor of Science Degree with Honours in Geology from the University of Western Australia in 1992. I hold a Post Graduate Diploma in Business (Management Studies) from Edith Cowan University (2005) and a Graduate Certificate in Geostatistics from Edith Cowan University (2008).

I am a current Member of the Australian Institute of Geoscientists (AIG No. 3843).

I have worked as a Geologist for more than 20 years since my graduation from University.

I have read the definition of "qualified person" set out in 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 fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

I most recently personally inspected the Kipoi Copper Project between 8th February 2012 to 17th February 2012.

I am responsible for the preparation of 1.1, 1.2, 1.3, 1.5, 1.6, 1.8.1, 1.8.2, 2.0, 3.0, 4.0, 5.1, 5.2, 5.3, 5.4, 5.7, 6.1, 6.2, 6.3, 6.4, 6.5,9.0, 10.0, 11.0, 12.0, 14.0, 19.0, 20.0, 23.0, 25.1.1, 26.0, 27.0, 28.0.

I am independent of TIGER in accordance with section 1.5 of NI 43-101.

I have had prior no involvement with the property that is the subject of the Technical Report.

I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.

As of the date of this Technical Report and certificate, 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.

Dated at Perth, Australia, this 22nd day of February, 2013.

s/ "*Mark Zammit*"

Mark Zammit
BSc (Hons), Grad Cert Geostat, Grad Dip Bus, MAIG
Principal Consultant Geologist
Cube Consulting Pty Ltd

Quinton de Klerk

I, Quinton de Klerk, do hereby certify that:

I am a director and Principal Mining Engineer with Cube Consulting Pty Ltd, 1111 Hay Street, West Perth 6005, Western Australia.

I am a QP who has co-authored of the technical report titled "Independent Technical Report (NI43-101), Kipoi Copper Project Stage 2 DFS Democratic Republic of Congo" (the "Technical Report") dated 22nd February 2013 relating to Tiger Resources Limited. I graduated with a national Higher Diploma in Metalliferous mining from the Technikon Witwatersrand (1993).

I am a current Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM No. 210114).

I have worked as a Mining Engineer for more than 18 years since my graduation.

I have read the definition of "qualified person" set out in 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 fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

I most recently personally inspected the Kipoi Copper Project between 24th February 2012 and 3rd March 2012.

I am responsible for the preparation of 1.7, 6.4, 15.0, 16.0, 25.1.2.

I am independent of TIGER in accordance with section 1.5 of NI 43-101.

I have had prior no involvement with the property that is the subject of the Technical Report.

I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.

As of the date of this Technical Report and certificate, 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.

Dated at Perth, Australia, this 22nd day of February, 2013.

s/ "*Quinton de Klerk*"

Quinton de Klerk
Cube Consulting Pty Ltd

Simon Dorling

I, Simon Dorling, of CSA GLOBAL PTY LTD, do hereby certify that:

I am an employee of CSA GLOBAL PTY LTD, 3 Ord Street, West Perth, WA Australia.

I am a QP who has co-authored of the technical report titled "Independent Technical Report (NI43-101), Kipoi Copper Project Stage 2 DFS Democratic Republic of Congo" (the "Technical Report") dated 22nd February 2013 relating to Tiger Resources Limited.

I hold a Masters of Science from the University of Bonn/Germany and a PhD in Economic Geology from the University of Western Australia, Perth/Australia. I am a practicing Geologist registered with the Australian Institute of Geoscientists. I am a current Member of the AIG (AIG, No. 3808). I am a "qualified person" for the purposes of National Instrument 43-101 – Standards for Disclosure for Mineral Projects ("NI 43-101"). I have practised as a geologist continuously since 20 years.

I have read the definition of "qualified person" set out in 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 am a "qualified person" for the purposes of NI 43-101.

I most recently personally inspected the Kipoi Copper Project between 8th March 2011 to 16th March 2011 and 4th May to 13th May 2012.

I am responsible for the preparation of Sections 1.4, 7.0, 8.0 this Technical Report.

I am independent (as defined by Section 1.5 of NI 43-101) of Tiger Resources Limited.

I have had no prior involvement with the property that is the subject of the Technical Report.

I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.

As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required for be disclosed to make the Technical Report not misleading.

Dated at Perth, Australia, this 22nd day of February, 2013.

s/ "*Simon Dorling*"

Dr. Simon Dorling
Principal Consultant Geologist
CSA Global Pty Ltd

David Readett

I, David John Readett, do hereby certify that:

I am Principal Consultant with Mworx Pty Ltd of Address 16 Vista St Kensington WA, Australia.

I am a QP who has co-authored of the technical report titled "Independent Technical Report (NI43-101), Kipoi Copper Project Stage 2 DFS Democratic Republic of Congo" (the "Technical Report") dated 22nd February 2013 relating to Tiger Resources Limited. I graduated with a Bachelor of Engineering in Metallurgical Engineering from the South Australian Institute of Technology, Australia in 1987.

I am a current Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM No. 106428).

I have worked as a Professional Metallurgical Engineer for more than 20 years since my graduation from University. Relevant experience has been gained from working in the base metal, precious metals, and coal industry on various projects throughout the world.

I have read the definition of "qualified person" set out in 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 fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

I conducted a site visit of the Kipoi Copper Project in the DRC between the 11th July and 19th July 2011.

I am responsible for the preparation of Sections 1.7, 1.8.3, 5.5, 5.6, 5.8, 13.0, 16.1, 16.2, 17.0, 18.0, 19.0, 20.0, 21.0, 22.0, 24.0, 25.1.2, 25.1.3, 25.1.4 and 26.0.

I am independent of TIGER in accordance with section 1.5 of NI 43-101.

I have had no prior involvement with the property that is the subject of the Technical Report.

I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.

As of the date of this Technical Report and certificate, 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.

Dated at Perth, Australia, this 22nd day of February, 2013.

s/ "*David Readett*"

David Readett
B.E., FAusIMM(CP)
Principal Consultant
Mworx Pty Ltd