

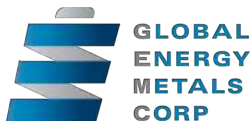
# NI 43-101 Technical Report Millennium Co-Cu-Au Deposit Mt. Isa, Australia

Effective Date: 18 January 2019  
Report Date: 14 February 2019

Report Prepared for

## Global Energy Metals Corporation

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# 1 Summary

This report was prepared as a Canadian National Instrument 43-101 (NI 43-101) Technical Report (Technical Report) for Global Energy Metals Corporation (GEMC or Company) by Kangari Consulting Limited (KCL) on the Millennium Co-Cu-Au Project in Queensland, Australia. GEMC is a Canadian registered and domiciled cobalt mining and development company based in Vancouver, Canada. The Company's principal assets are its cobalt, copper, gold exploration project in Queensland, Australia and the companies Werner Lake cobalt exploration project in Ontario, Canada.

## 1.1 Property Description and Location

The Millennium Project is situated 75 km east-north-east of Mt. Isa and 33 Km north-west of Cloncurry in Queensland State, Australia. The project is at approximately latitude 20° 35' south, longitude 140° 11' east. Mt. Isa is a major mining city with a population of over 20,000 and is accessed by daily flights from Brisbane, Darwin and Townsville. There is a railway connecting Mt. Isa to Townsville and the sealed Barkly and Flinders Highway runs between Mt. Isa and Townsville.

The Millennium Project is located in the Mt. Isa Mineral Province, a region recognized as a world-class mining region, with more than a quarter of the world's lead and zinc reserves, 5% of the world's silver resources and 1.5% of the world's copper resources. The Millennium Project is located less than 20km from CuDeco's Rocklands Project which holds a JORC compliant ore reserve of 11.6Mt grading 0.87% Cu, 0.21 g/t Au (Wyche 2018) in multiple lodes within an iron oxide copper gold ore deposit, the QP has been unable to independently verify this data and the mineralisation quoted is not necessarily indicative of mineralisation on the property that is the subject of this technical report. The Millennium Project comprises five Mining Leases; ML's 2512, 2761, 2762, 7506 and 7507 all owned by Element Minerals Australia Pty Ltd, a 100% owned subsidiary of Hammer Metals Ltd. The Mining Leases cover a combined area of 135.217 Ha.

## 1.2 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

The Millennium Project is accessed from the regional centre of Mt. Isa using the Barkly Highway to Cloncurry (120 km). From Cloncurry the site is reached using the 13 km stretch of the tarred road to the Rocklands Copper Mine. The last 19 km to the Millennium Project is accessed using cattle station tracks.

The area has a semi-arid climate with an average rainfall of 450mm, 45% which falls during January and February, and an average temperature range of 17 to 32 degrees. A distinct wet season usually occurs from December to March with

over 75% of the annual rainfall occurring during these months. Exploration activities are suspended during this period.

The natural vegetation is moderate consisting of eucalyptus, acacias and spinifex.

The closest population centre to the Project is the town of Cloncurry with an established mining, transport and processing infrastructure along with a skilled workforce. The local population in 2016 was 2,719 people.

The physiography of the Millennium Project is dominated by an elevated north trending ridge rising up to 100 metres from the surrounding topography on ML7506 and ML7507. The deposit is located at an elevation of 245 metres.

### **1.3 History**

The Millennium Project history dates back to the early part of the last century with a number of small shafts and pits scattered along the historical Federal Copper Mine Leases. The Federal Mine which operated in the early 1900's is reported to have produced 3,977 tonnes grading 24% Cu together with cobalt mineralisation (Carter 1959).

The first modern exploration program commenced in 1964 with initial diamond drilling by the Carpentaria Exploration Company and by several companies in the 1970's and 1980's.

A soil sampling program was completed on the property in 2014 by Chinalco Yunnan Copper Resources Ltd. which identified a well-defined Cu and As anomaly along strike of the deposit.

Chinalco Yunnan Copper Resources Limited drilled seventeen reverse circulation drill holes totaling 2,815.00m in 2013 and 2014. The drill holes (Q001 to Q017) were drilled on a 100m to 200m section spacing along a 1,080m strike. The drill program was designed to infill and extend the previous drilling, both along-strike and down-dip on the main mineralised zone, as well as validating historic drill results. Significant intersections of Cu, Co and Au were reported in the drill program.

In 2016 Hammer Metals Ltd drilled twenty-three reverse circulation holes MIRC001 to MIRC023. The drilling was designed to infill the Chinalco Yunnan Copper Resources Ltd drilling to a drill section spacing of 50m to 100m, and test for down-dip continuity along the main mineralised zone.

A mineral resource estimate was reported by Haren (2016) who completed a resource statement according to JORC guidelines using reverse circulation drill holes Q001-Q017 and MIRC001-MIRC023. Copper

equivalent (CuEq) grades were calculated using estimated block grades for Cu, Co, Au and Ag. The CuEq calculation was based solely on commodity prices without assumptions about recovery or payability of the different metals. Prices used by Haren (2016) were a reflection of the market as at October 1<sup>st</sup>, 2016 and forward-looking forecasts provided by consensus analysis. Metal prices used were: Cu: US\$4,600/t; Co: US\$27,000/t; Au: US\$1,330/oz; and Ag: US\$20/oz.

The copper equivalent equation is:

$$CuEq = (Cu \% + (Co \% \times 5.9) + (Au \text{ ppm} \times 0.9) + (Ag \text{ ppm} \times 0.01))$$

The Millennium Inferred Mineral Resource reported by Haren (2016) at 0.70% CuEq and 1.0% CuEq cut-offs is summarised in Table 1-1.

**Table 1-1 Historic Resource Report**

Cu Eq Cut-off	Tonnes	CuEq (%)	Cu (%)	Co (%)	Au (ppm)
1.00%	3,070,000	1.29	0.35	0.14	0.12
0.70%	5,890,000	1.08	0.32	0.11	0.11

The authors caution that a qualified person has not done sufficient work to validate the historical estimates, and GEMC is not treating the historical estimates as current mineral resources or reserves. Kangari has not completed a detailed review of the historical resource or completed a new resource estimate in this 43-101 technical report. It is believed that the JORC compliant resource is relevant and of a reliable nature; however additional drilling and geological modelling is recommended to upgrade the resource to be a current NI43-101 compliant resource. This would include preparing the resource to CIM guidelines.

## 1.4 Geological Setting and Mineralisation

The Millennium deposit lies within palaeo-Proterozoic metasediments of the Quamby-Malbon Sub-province of the Eastern Succession of the Mt. Isa Inlier within the Corella Formation of the Mary Kathleen Group.

Mineralisation is predominantly hosted within graphitic metasediments, siltstones and ferruginous quartzite. The mineralisation, interpreted to be associated with the regional Pilgrim Fault, dips steeply to the west and parallels the main structural geology and stratigraphy. The mineralisation is hosted by north north-east trending shears that exploit competency contrasts between lithological units and pre-existing alteration zones. The width and tenor of the

mineralisation appears to be strongly influenced by the host's propensity for brittle deformation. Numerous north-east and north-west trending faults cross cut and locally offset the host stratigraphy.

The main deposit has been divided into a Northern and Southern Zone. The Northern Zone extends along an approximate 250 metre strike length and is hosted by a 200m wide sequence of quartzites and calc-silicates within graphitic/micaceous schists. The western margin of the quartzites comprises a zone up to 90m wide of thinly interbedded schist and quartzite. Numerous lithological contacts and cross faults create widespread brittle and ductile deformation within this zone, permitting pervasive ferruginous, chlorite and feldspar alteration with localised silicification along lithological contacts and shears. Mineralisation occupies moderately to steeply dipping NNE-striking tabular shear zones within the alteration halo.

The Southern Zone comprises a narrow 750 metre striking NNE-trending shear zone that has a tendency to follow narrow calc-silicate to quartzite intervals within a broad package of graphitic and micaceous schist.

The sulphide mineralisation occurs as disseminated pyrite, chalcopyrite, and bornite with cobaltiferous pyrite and cobaltite. Sulphide mineralisation is also contained in sulphide-rich veins, quartz veins and breccias. Several generations of veining are evident with veins consisting of pyrite and pyrite and chalcopyrite. Core samples are cut by numerous vein types with early sinuous and late planar quartz veins cut by late quartz-feldspar-apatite-rutile-chalcopyrite veins.

Oxidation reaches to depths of 25m below surface. Malachite is commonly observed in the supergene zone. Supergene bornite, chalcocite and covellite, and chalcopyrite with hypogene bornite and rimmed by covellite, tetrahedrite and galena has been identified in mineralogical investigations.

## 1.5 Deposit Types

The mineral deposits of the Mt. Isa Inlier have been categorised into eight major deposit types by Blake (1987). The Millennium Project deposit falls within the Type 2 miscellaneous category which is shear/fault-controlled vein type deposits. The Millennium deposit is unusual given the cobalt signature with the copper and gold mineralisation.

The copper mineralisation in the eastern part of the Mt. Isa Inlier is characterised by numerous small shear zones and fracture-controlled vein deposits with the controls on the mineralisation being largely structural. Many deposits occur near major structures, but most are in sub-ordinate shear zones situated away from the main faults. Most of the gold production from the Mt. Isa

Inlier has been produced as a by-product from shear and fault-controlled vein copper deposits, particularly in the Eastern Fold Belt.

## 1.6 Exploration

The exploration work performed on the Millennium Project prior to its acquisition by GEMC is considered historical. The only exploration completed by GEMC/Hammer joint venture is the collection of 72 rock chip samples which were announced to the TSX on June 4, 2018.

The metal concentrations in the selectively collected rock chip samples ranged between Co: 0.0001-0.12%; Au: <0.01-0.21 g/t; Ag: <0.20-42.6 g/t; Cu: 0.0011-45.3%; Pb <0.0002-0.16%; and Zn 0.003-0.25%.

The results of rock chip sampling in the northernmost part of the Project ('Northern Extension') approximately 1km north of the historic Millennium resource area are promising. There are similar host rocks in this area to the main resource area, with associated strong soil geochemical anomalies.

There has been no further geological mapping to that completed prior to GEMC's involvement.

## 1.7 Drilling

GEMC have drilled 10 diamond drill holes (1,064m) and 4 reverse circulation drill holes (548m) at the Millennium Project since 2018. The 10-hole diamond drill program was designed to test the up-dip continuity at the Millennium North deposit and confirm historical estimates of Co mineralisation reported in 2016 by Hammer. The drill holes are located on six sections at 50 metre spacing in the northern part of the deposit. Reverse circulation drill hole MIRC024 was drilled in the northern part of the deposit, whereas MIRC025 and MIRC026 were drilled in the southern part of the deposit. Drill hole MIWB01 was a vertical hole drilled to provide the water required for diamond drilling.

Geologic cross sections for the six drill lines in the northern part of the deposit confirm mineralisation is largely contained within the broad package of ferruginous quartzite and in graphitic schist in close vicinity of the quartzite unit with mineralisation paralleling the steep westerly dipping stratigraphy. The mineralisation extends into the conglomeratic metasediment in the footwall of the quartzite package. The assay results from the RC drill holes in the southern part of the deposit confirm mineralisation occurs as a discrete narrower zone of mineralisation within an intercalated sequence of graphitic schist and calc-silicate metasediments.

The recent drilling by GEMC has been successful in confirming the style and grade of mineralisation intersected in deeper, historical reverse circulation drill holes.

## **1.8 Sample Preparation, Analyses and Security**

There is little documentation about sample collection, preparation, and security for the pre-2013 drilling campaigns and as a result the drilling prior to 2013 was not included in the historical resource estimate. Later drilling by CYU and Hammer which provided the vast majority of the drill data, were carried out with industry-standard sample collection methods and appropriate quality assurance and quality control (QA/QC) protocols. RC drilling accounts for 100% of the historical resource estimate by Haren (2016), and these samples were collected at 1m intervals using standard cyclones and splitters at the drill site.

The drilling programs by Hammer and GEMC have included QA/QC procedures using certified standards, blanks and field duplicate samples. Field duplicates and standard control samples were used at a frequency of 3 field duplicates, 4.5 certified standards and 4.5 certified blanks per 100 samples.

The drill core from the 2018 diamond drill program was transported to the GEMC exploration facility in Cloncurry for logging and sampling. The core is jugged, metre marked, photographed both wet and dry and logged for recoveries, RQD, and continuity of orientation lines. Geological and geotechnical logging is completed by geologists prior to the core being half-cut and sampled for assay. Geological logs record lithology, alteration assemblages and economic minerals are identified and described.

Every drilled metre of GEMC RC and diamond drilling was qualitatively logged using an Olympus Vanta portable XRF instrument and KT-10 magnetic susceptibility meter. Two duplicate samples were taken from each drill hole and inserted at the end of the borehole sample sequence. Assays were taken on 1 and 4m sample lengths.

Much of the sample material from the RC drilling has been retained as pulp samples. The half and quarter core are carefully organised at a secure warehouse in Mt. Isa.

## **1.9 Data Verification**

Kangari representative and QP C.J Picken AusIMM, MIMMM conducted an on-site inspection of the Millennium Project on January 16 through January 18, 2019. Mr. Picken conducted general site and geologic field reconnaissance including examination of surface bedrock exposures, ground truthing of

reported drill collar locations. Mr. Picken also examined selected core intervals from boreholes MIDD001, MIDD008 and MIDD010 and historical RC chips from previous drill campaigns. The conceptual geological model, data entry management protocols and drilling and sampling procedures and the associated quality ('QA/QC') methods presently employed were also reviewed.

Field observations during the site visit generally confirm previous reports on the geology of the Project area. Bedrock lithologies, alteration types and significant structural features are all consistent with descriptions in existing Project reports, and the author did not see any evidence in the field that might significantly alter or refute the current interpretations regarding local geology and mineralisation.

Kangari selected 14 intervals for the verification of recent and historical assays. The check assay results show excellent correlation with the assays used in the historical Mineral Resource estimation in 2016 and those reported subsequently to the TSX by GEMC in 2018. The majority of Co and Cu check assays returned within 1-2% of the original reported assay.

Based on the results of Kangari's site investigation and data validation efforts, Kangari considers the GEMC/Hammer drilling and sampling data, as contained in the current Project database is according to general industry accepted standards and suitable for use in the reporting of historical mineral resources and for future mineral resource estimations.

## 1.10 Metallurgical Testing

A preliminary metallurgical test work program was completed by ALS Adelaide (2018) on two composite ¼ core samples of quartzite. One sample was a high-grade composite with head assay: Cu 0.45% Co 0.18% Au 0.16 ppm. The second sample a low-grade composite sample with head assay: Cu 0.28%, Co 0.04% Au 0.09 ppm.

The test work was aimed at establishing suitable rougher flotation conditions processing the samples. Chalcopyrite and pyrite were the dominant sulphides in the samples with minor cobaltite.

Separate Cu/Au and Co/Au concentrates were produced from both high and low grade samples with recoveries of 95.1% Cu, 95.4% Co and 81.4% Au for the high-grade composite sample and 91.3% Cu, 91.7% Co and 77.9% Au for the lower grade composite sample.

## 1.11 Adjacent Properties

The exploration permits surrounding the Millennium Project ML's are held by Rio Tinto, Roseby Copper (South) Pty Ltd, and Mount Isa Mines Ltd. Significant

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copper mineralisation has been intersected in three RC boreholes on the Roseby Copper (South) EPM 25759 and EPM 25761 that are currently owned by Copper Mountain Mining Corporation.

High grade mineralisation (5.46% Cu, 14.2 g/t Ag and 1310 ppm Co) has also been reported in rock chip samples collected on EPM25759 immediately adjacent to GEMC's ML2761 and ML2761. These grades were reported to the Australian Stock Exchange by CYU on 8<sup>th</sup> November 2013.

## 1.12 Interpretation and Conclusions

The copper, cobalt and gold mineralisation at the Millennium Project is closely related to faulting, shearing and fracturing in close vicinity of the Pilgrim Fault, a major regional scale structure within the Mt. Isa Inlier.

The mineralisation is closely associated with a relatively thick sequence of ferruginous quartzite within a package of finer grained sediments including graphitic schists, meta-siltstone, meta-sandstone, conglomerate and calc-silicate rocks. The sulphide mineralisation, predominantly pyrite and chalcopyrite occur as disseminations in altered metasediments, and in several generations of sulphide-rich veins and in quartz veins, commonly along lithological contacts.

The highest grade mineralisation outlined to date is contained within the main quartzite body along a 250 metre strike in the Northern Zone. The mineralised structure extends to the south along a 750 metre strike in graphitic schist and calc-silicates (Southern Zone). The competent, more rigid, quartzite in the Northern Zone is cut by numerous north-east and north-west trending fractures which appear to have been important in concentrating mineralisation.

There is excellent potential to increase the current inferred mineral resource at the Millennium Project by further resource definition drilling. The drill density is low along strike of the deposit to the north and deeper drilling beneath holes MIRC001 and MIRC012 on section 7723700N and beneath drill holes Q011 and MIRC019 on section 7723650N is required to test for mineralisation possibly plunging to the north at depth.

There is also potential to increase resources within the current inferred zone by closer spaced infill drill holes identifying high grade shoots. There is also potential at depth below the current defined Mineral Resource to 280 metres depth.

The results of historical soil geochemistry followed up by rock chip sampling by GEMC across the Millennium Mining Leases have identified several promising targets that have never been drilled by previous operators. Kangari considers there is excellent potential to delineate further near surface



resources particularly in northern parts of ML7506 where the critical zone of quartzitic rocks hosting the main historic resource have been mapped with coincident high-grade Cu concentrations in rock chip samples.

The two mineralised zones in mica schist in eastern parts of ML2762 mapped by Hammer geologists with high grade Cu in rock concentrations are in the vicinity of the Federal Cu mine. There is gossanous material outcropping at surface in this part of the ML that has never been trenched or drilled. This area also has the potential to increase the ore resources at the Millennium Project.

Further diamond drilling is required for resources to be classified as indicated or measured categories under 43-101 reporting standards.

The results of preliminary metallurgical test work are encouraging for the Millennium Project with high recovery rates for copper, cobalt and gold in two composite samples from the recent 2018 diamond drilling program.

### 1.13 Recommendations

A two-phase exploration program is recommended for the Millennium Project.

#### ***Phase 1***

Detailed 25 metre infill grid soil geochemistry is recommended in three areas (Total 337 samples):

- (a) along a 250 metre strike in the 'Northern Extension' in ML7506;
- (b) along a 250 strike along the eastern part of ML2762, and
- (c) over the entire ML2512.

Detailed geologic and structural mapping of outcrop.

Petrographic and mineragraphic examination on selected mineralised drill core samples.

#### ***Phase 2***

Reconnaissance RC drilling at the targets identified from the 25m infill grid soil sampling program.

Detailed infill diamond drilling to further evaluate the existing ore resource, including some twinning of RC drill holes.

Remodeling of the geology and mineralisation into discrete structural domains using Co equivalent grades.

Preparation a new Resource Estimation based on all new drilling since the Mineral Resource by Haren (2016)

The estimated cost of the Phase 1 program is US\$ 73,350; and Phase 2 program US\$ 1,050,000.

## **2 Introduction and Terms of Reference**

### **2.1 Scope of Work**

This report was prepared as an NI 43-101 Technical Report for GEMC by KCL on the Millennium Co-Cu-Au Project in Queensland, Australia.

The quality of information, conclusions, and estimated contained herein is consistent with the level of effort involved in KCL's services, based on i) information available at the of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by GEMC subject to the terms and conditions of its contract with KCL and relevant securities legislation.

The contract permits GEMC to file this report as a Technical Report with Canadian securities regulatory authority pursuant to NI 43-101, Standards of Disclosure for Mineral Projects. Except for the purposes legislated under provincial securities law, any other uses of this report by any third party is at that party's sole risk. The responsibility for this disclosure remains with GEMC. The user of this document should ensure that this is the most recent Technical Report for the property as it is not valid if a new Technical Report has been issued.

### **2.2 Qualifications of Kangari Consulting Limited and KCL Team**

The Consultants preparing this Technical Report are specialists in the fields of geology, exploration, Mineral Resource and Mineral Reserve estimation.

None of the Consultants or any associates employed in the preparation of this report has any beneficial interest in GEMC. The Consultants are not insiders, associates, or affiliates of GEMC. The results of this Technical Report are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between GEMC and the Consultants. The Consultants are being paid a fee for their work in accordance with normal professional consulting practice.

The following individuals, by virtue of their education, experience and professional association, are considered Qualified Persons (QP) as defined in the NI 43-101 standard, for this report, and are members in good standing of appropriate professional institutions. QP certificates of authors are provided at the end of this document. The QP's are responsible for specific sections as follows:

- Christopher Picken is the QP with overall responsibility of this technical report. In addition, for Sections 6 through 12, and portions of Sections 1, 24, 25 and 26 summarized therefrom, of this Technical Report;
- Timothy Strong is the QP responsible for Sections 2 through 5, and section 13, and portions of Sections 1, 24, 25 and 26 summarized therefrom, of this Technical Report;

## **2.3 Site Visit**

KCL representative and QP C.J Picken AusIMM, MIMMM conducted an on-site inspection of the Millennium Project on January 16 through January 18, 2019. Mr. Picken spent three full days at Project site accompanied by Luke Pickering, geologist of Hammer.

Whilst on-site Mr. Picken conducted general site and geologic field reconnaissance including examination of surface bedrock exposures, ground truthing of reported drill collar locations. Mr. Picken also examined selected core intervals from drill holes MIDD001, MIDD008 and MIDD010 and historical RC chips from previous drill campaigns. The conceptual geological model, data entry management protocols and drilling and sampling procedures and the associated quality ('QA/QC') methods presently employed were also reviewed.

Field observations during the site visit generally confirm previous reports on the geology of the Project area. Bedrock lithologies, alteration types and significant structural features are all consistent with descriptions in existing Project reports, and the author did not see any evidence in the field that might significantly alter or refute the current interpretations regarding local geology and mineralisation (as described in Section 7 of this report).

Specific core intervals from a variety of drill holes (both historic and modern) were selected for visual inspection based on a preliminary review of the drill hole logs and associated assay values. All core intervals requested were available. In all cases, the core samples chosen for inspection accurately reflect the lithologies recorded on the drill logs, and the degree of visible alteration and evidence of mineralisation observed is consistent with the grade range indicated by reported assay values.

## **2.4 Acknowledgement**

KCL would like to thank the staff at Hammer Metals and GEMC for the assistance provided to the company in way of providing all relevant data and assistance with the site visit to the Millennium Co-Cu-Au project.

## 2.5 Units and Currency

All currency in this report are quoted as United States Dollars (USD) \$ (unless specified in the text).

Gold and Silver values are presented in parts per million ('ppm'). Copper and cobalt are presented in percent (%). In raw assay files gold is reported as both parts per billion ('ppb') and ppm. Copper and cobalt are reported as ppm.

### 2.5.1 Glossary of Terms

Table 2-1 Glossary of Terms

<b>Abbreviation</b>	<b>Meaning</b>
<b><i>Metals</i></b>	
Ag	Silver
Al	Aluminum
Au	Gold
Co	Cobalt
Cu	Copper
Mo	Molybdenum
Ni	Nickel
<b><i>Measurements</i></b>	
g	grams
g/cm <sup>3</sup>	Grams per centimeter cubed
g/t	grams per tonne
m	meters
km	kilometers
ppm	parts per million
oz	ounces
lb	pounds (weight)
ppb	parts per billion
t	tonnes
%	percent
g/t	grams per tonne

<b>Abbreviation</b>	<b>Meaning</b>
<b><i>Companies</i></b>	
GEMC	Global Energy Metals Corporation
Hammer	Hammer Metals Ltd
ALS	ALS Laboratories
KCL	Kangari Consulting Limited
<b><i>Currency</i></b>	
\$	United States Dollar
\$AUD	Australian Dollar
\$C	Canadian Dollar
£	British Pound
<b><i>Misc.</i></b>	
QP	Qualified Person
ASX	Australian Stock Exchange
TSX	Toronto Stock Exchange

### **3 Reliance on Other Experts**

The Consultant's opinion contained herein is based on information provided to the Consultants by GEMC throughout the course of the investigations.

The Consultants used their experience to determine if the information from previous reports was suitable for inclusion in this Technical Report and adjusted information that required amending. This report includes technical information, which required subsequent calculations to derive subtotals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the Consultants do not consider them to be material.

The QP's opinions contained herein are based on public and private information provided by GEMC and Hammer Metals Ltd through the course of the study. The authors have carried out due diligence reviews of the information for preparation of this report. The authors are satisfied that the information is accurate at the time of writing and the interpretations and opinions expressed are reasonable and are based on a current understanding of mineralisation processes and host geologic setting. The authors have made reasonable efforts to verify the accuracy of the data relied on for this report.

KCL has relied upon GEMC for information regarding the surface land ownership/agreements as well as the mineral titles and their validity. Land titles and mineral rights for the project have not been independently reviewed by KCL and KCL did not seek an independent legal opinion for these items.

## **4 Property Description and Location**

### **4.1 Location**

The Millennium Project is situated 75 km east-north-east of Mt. Isa and 33 Km north-west of Cloncurry in Queensland State, Australia. The project is at approximately latitude 20° 35' south, longitude 140° 11' east. The Project location within Queensland is illustrated in Figure 4-1. Mt. Isa is a major mining city with a population of over 20,000 and is accessed by daily flights from Brisbane, Darwin and Townsville. There is a railway connecting Mt. Isa to Townsville (on the east coast) and the sealed Barkly and Flinders Highway runs between Mt. Isa and Townsville. It is situated in an area with a number of producing mines.



Figure 4-1 Location of the Millennium Project (Source: The State of Queensland (Department of Natural Resources and Water) 2007)



## 4.2 Mineral Tenure

The legislative framework for exploration development and mining tenure is administered by the State of Queensland through the Mineral Resources Act, 1989.

A Mining Lease (ML) is granted under the act for mining operations and entitles the holder to machine-mine and carry out activities associated with mining or promoting the activity of mining.

The Millennium Deposit comprises five Mining Leases; ML's 2512, 2761, 2762, 7506 and 7507 (Table 4-1). All of the leases are owned by Element Minerals Australia Pty Ltd, a 100% owned subsidiary of Hammer Metals Ltd (Figure 4-2). The leases cover a combined area of 135.217 Ha and expire in 2025. The original grant dates and the dates that individual leases were legally surveyed are detailed in Table 4-1. The project is centred on coordinates (GDA94/MGA94) Zone 54 416000E 7723500N.

There are no annual expenditure requirements on the five ML's. The tenements are in good standing with the Queensland Department of Mines and no known impediments exist.

**Table 4-1 Mining Lease Information**

Tenement	Area (Ha)	Original Grant Date	Current Term	Status	Held From	Expiry Date	Marked Out
ML2512	4.0470	06/12/1973	15 Years	Granted	08/01/2014	31/12/2025	30/07/1968
ML2761	20.0800	29/06/1989	15 Years	Granted	08/01/2014	30/06/2025	25/08/1987
ML2762	15.8200	01/07/1989	15 Years	Granted	08/01/2014	30/06/2025	25/08/1987
ML7506	46.4600	10/03/1994	11 Years 9 months	Granted	08/01/2014	31/12/2025	16/11/1990
ML7507	48.8100	10/03/1994	11 Years 9 months	Granted	08/01/2014	31/12/2025	16/11/1990

## 4.3 Underlying Agreements

The Millennium Project is currently a joint venture project between Hammer Metals Limited ('Hammer') an ASX listed Australian company and Global Energy Metals Corporation ('GEMC') a TSX listed Canadian company. Under an agreement signed in May 2017 GEMC can earn up to a 75% interest by spending up to CAD2.5 million on exploration over 36 months. Hammer will operate the joint venture until GEMC has earned a 65% interest. GEMC has completed work at the Millennium Project since 2018 utilising Hammer technical staff.

GEMC currently holds 25% interest in the project and has entered into a binding letter of intent to acquire the balance of the interest in the project such that it will hold 100%.

The landowner receives a sum of AUS\$ 1,000 per annum as compensation for accessing the mining leases.

Global Energy Metals received conditional approval from the TSX Venture Exchange (the “Exchange”) for the acquisition of the remaining interest in the Millennium Property that the Company does not already own from Hammer and the acquisition of the Mt. Isa Projects pursuant to the share sale agreement dated November 27, 2018 between the Company, Hammer and its subsidiaries. As a requirement for final acceptance the Exchange requested that the Company file a report in accordance to CIM Definition Standards for Mineral Resources and Mineral Reserves. With the completion of the Millennium Technical Report, GEMC will now make final submission to the Exchange.

No royalties are due on completion of the transaction. GEMC will issue Hammer Metals Limited 19.9% of its issued and outstanding shares in exchanged for 100% of the Millennium projects as per the news release dated June 26, 2018 and November 29, 2018.

#### **4.4 Native Title**

The Mining Leases are located within the Kalkadoon Native title claim area. Although the leases were granted prior to the onset of Native Title under the Aboriginal Cultural Heritage Act, Hammer completed a heritage survey to determine the location of artefact zones within the leases to avoid damage to any Aboriginal Cultural heritage. The survey located five artefact sites within the Mining Leases, with chert chippings and grinding stones recorded. The locations do, however, not affect the exploration work completed or envisaged.

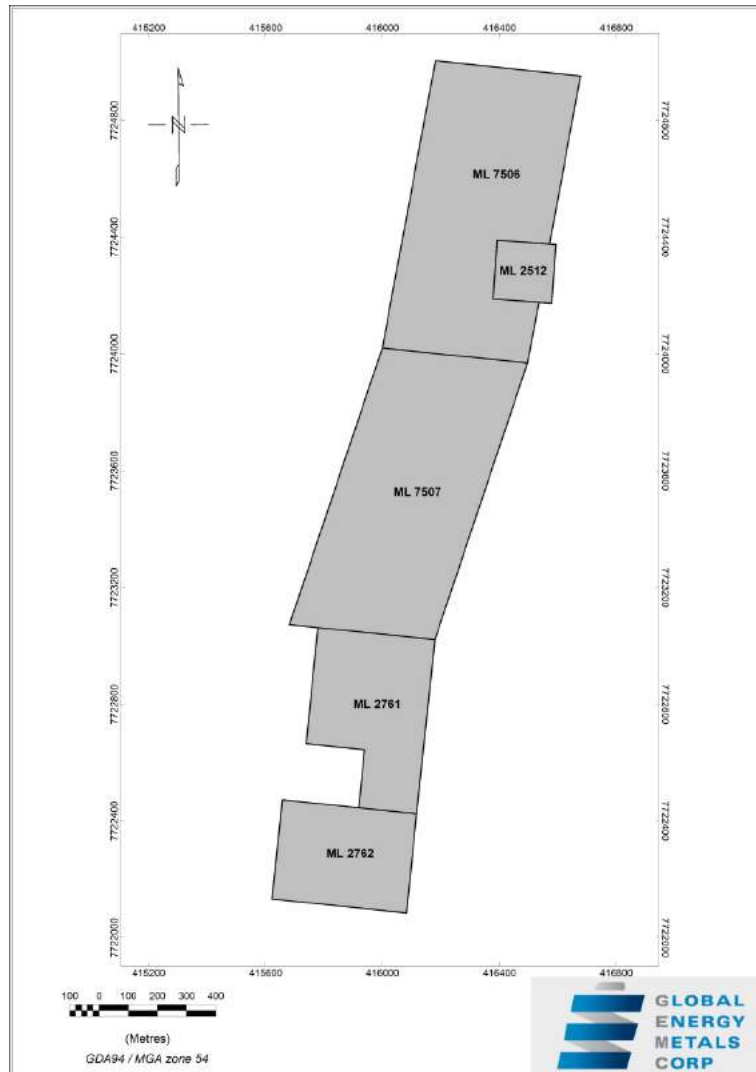


Figure 4-2 Millennium Project Mining Lease Boundaries

## 4.5 Environmental Considerations

The Department of Environment and Heritage Protection issues an Environmental Authority (EA) to operate. The only current environmental liability is for the restoration of the pads prepared for recent diamond and RC drill programs.

## **4.6 Mining Rights in Australia**

The Mining Leases entitle GEMC/Hammer to machine mine minerals stipulated in the lease and gives full surface rights and access. Queensland state royalties are calculated and paid annually, based on 2.7% of the value of shipment invoices minus shipping costs. The first \$AUD 100,000 of metal value is royalty-free each year.

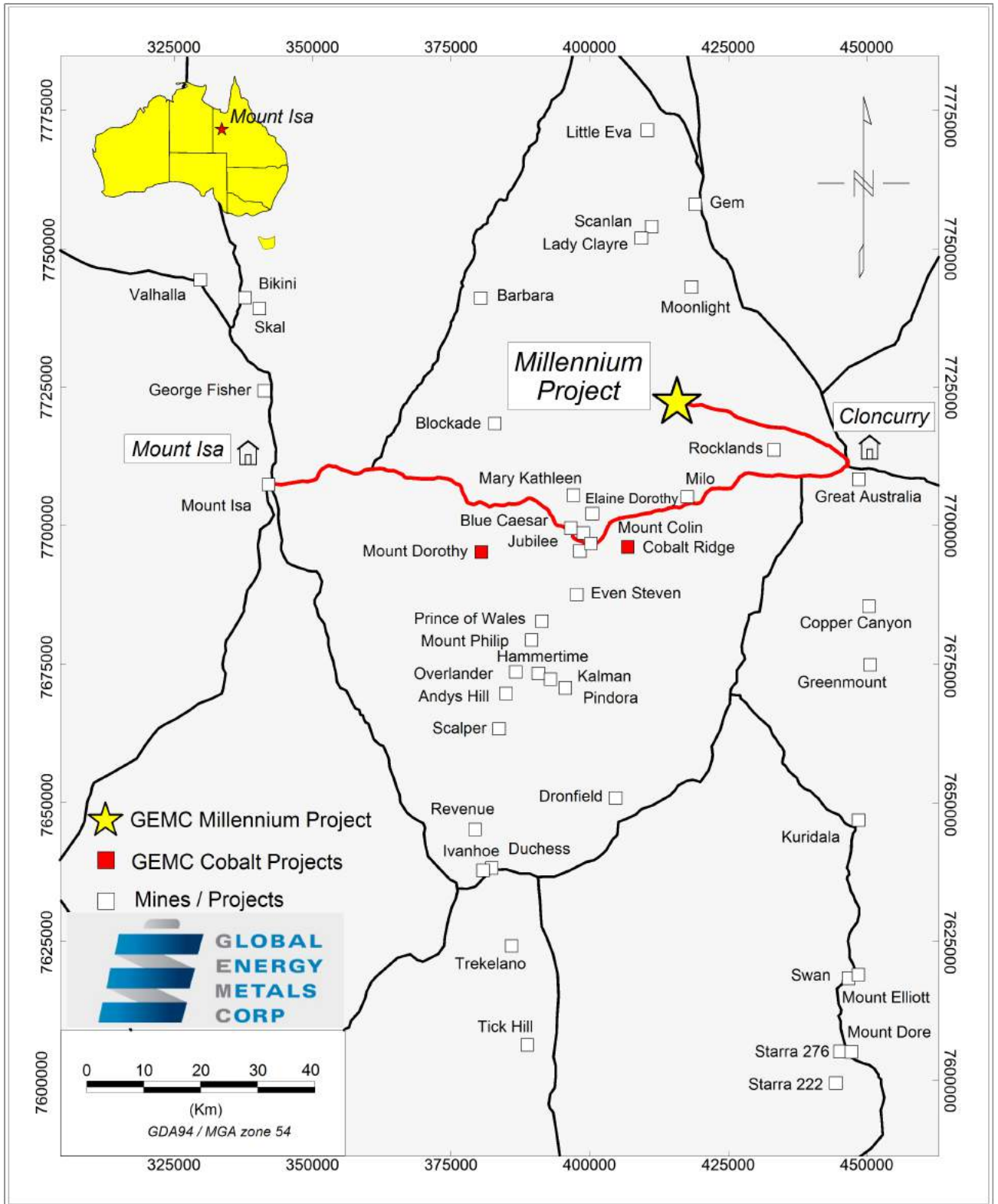
There are no other known factors or risks that may affect the rights or ability to work on the property.

KCL has not reviewed the property title legal status or environmental liabilities and expresses no opinion as to the ownership status of the property.

## **5 Accessibility, Climate, Local Resources, Infrastructure, and Physiography**

### **5.1 Accessibility**

The Millennium Project is accessed from the regional centre of Mt. Isa using the Barkly Highway to Cloncurry (120 km). From Cloncurry the site is reached using the 13 km stretch of the tarred road to the Rocklands Copper Mine. The last 19 km to the Millennium Project is accessed using cattle station tracks (Figure 5-1). There are several river/creek crossings which can become impassable for relatively short periods of time during the peak wet season.



**Figure 5-1 Millennium Project Regional Location and Access with main Mineral Deposits**

## 5.2 Local Resources and Infrastructure

The Millennium Project is located in the Mt. Isa Mineral Province, a region recognized as a world-class mining region, with more than a quarter of the world's lead and zinc reserves, 5% of the world's silver resources and 1.5% of the world's copper resources. The Millennium Project is located less than 20km from CuDeco's Rocklands Project which contains a JORC compliant ore reserve of 11.6Mt grading 0.87% Cu, 0.21 g/t Au (Wyche 2018) as of the 31<sup>st</sup> December 2017, in multiple lodes within an iron oxide copper gold ore deposit. The QP has been unable to independently verify this data and the mineralisation quoted is not necessarily indicative of mineralisation on the property that is the subject of this technical report.

The Mt. Isa Mineral Province is connected to Townsville and the coast via the Great Northern Rail Line and the Flinders Highway. The Great Northern Rail Line is operated by Queensland Rail, owned by the Queensland government.

The closest population centre to the Millennium Project is the town of Cloncurry with established mining, transport and processing infrastructure along with a skilled workforce. The local population in 2016 was 2,719 people. Cloncurry is used as the exploration base for the program's activities. Cloncurry (via Mt. Isa) is serviced by commercial aircraft from Townsville, Cairns and Brisbane. The nearest national grid power supply is situated within 19 km of the Millennium Project. A major 220Kv transmission line extends from the Chumvale substation near Cloncurry to the Rocklands copper and Dugald River mines.

The project has access to a limited water supply. A water bore was drilled in 2018 to provide water for diamond drilling.

## 5.3 Climate

The area has a semi-arid climate with an average rainfall of 450mm, 45% which falls during January and February, and an average temperature range of 17 to 32 degrees Celsius. High evapotranspiration rates results in a water deficit for most of the year. A distinct wet season usually occurs from December to March with over 75% of the annual rainfall occurring during these months. Exploration activities are suspended during this period. The published climatic data recorded during the period 1978-2016 in Cloncurry is detailed in Table 5-1.

**Table 5-1 Climatic Data at Cloncurry (Source Australian Bureau of Meteorology)**

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Record High °C	46.3	44.9	42.5	39.9	38.7	34.9	34.8	37.1	41.3	43.5	45.1	46.9
Average High °C	36.6	36.4	35.8	33.7	29.4	26.2	26.2	28.8	33.1	36.4	38.0	38.5
Average Low °C	24.7	24.3	22.8	20.1	15.5	11.6	10.6	12.2	16.5	20.4	23.3	24.8
Record Low °C	17.3	15.3	14.8	8.9	4.8	2.0	1.8	3.3	4.2	9.0	12.3	16.7
Ave. Rainfall (mm)	171.8	97.9	74.1	18.5	7.9	7.9	3.8	3.6	6.8	18.0	33.8	81.5
Ave. Humidity (%)	39	40	30	27	25	27	24	20	19	16	22	27

## 5.4 Physiography and Vegetation

The topography of the Millennium Project is dominated by an elevated north trending ridge rising up to 100 metres from the surrounding topography on ML7506 and ML7507 (Plate 5-1). The deposit is located at an elevation of 245 metres. The elevated ridge on the western Project boundary reaches an elevation of 345 metres. Ephemeral streams drain from the main elevated ridge towards the east (Figure 5-2).

The natural vegetation is moderate consisting of eucalyptus, acacias and spinifex.

The dominant land use in the area is cattle grazing.



**Plate 5-1 Panoramic View of the Millennium Projects showing Physiography and Vegetation**



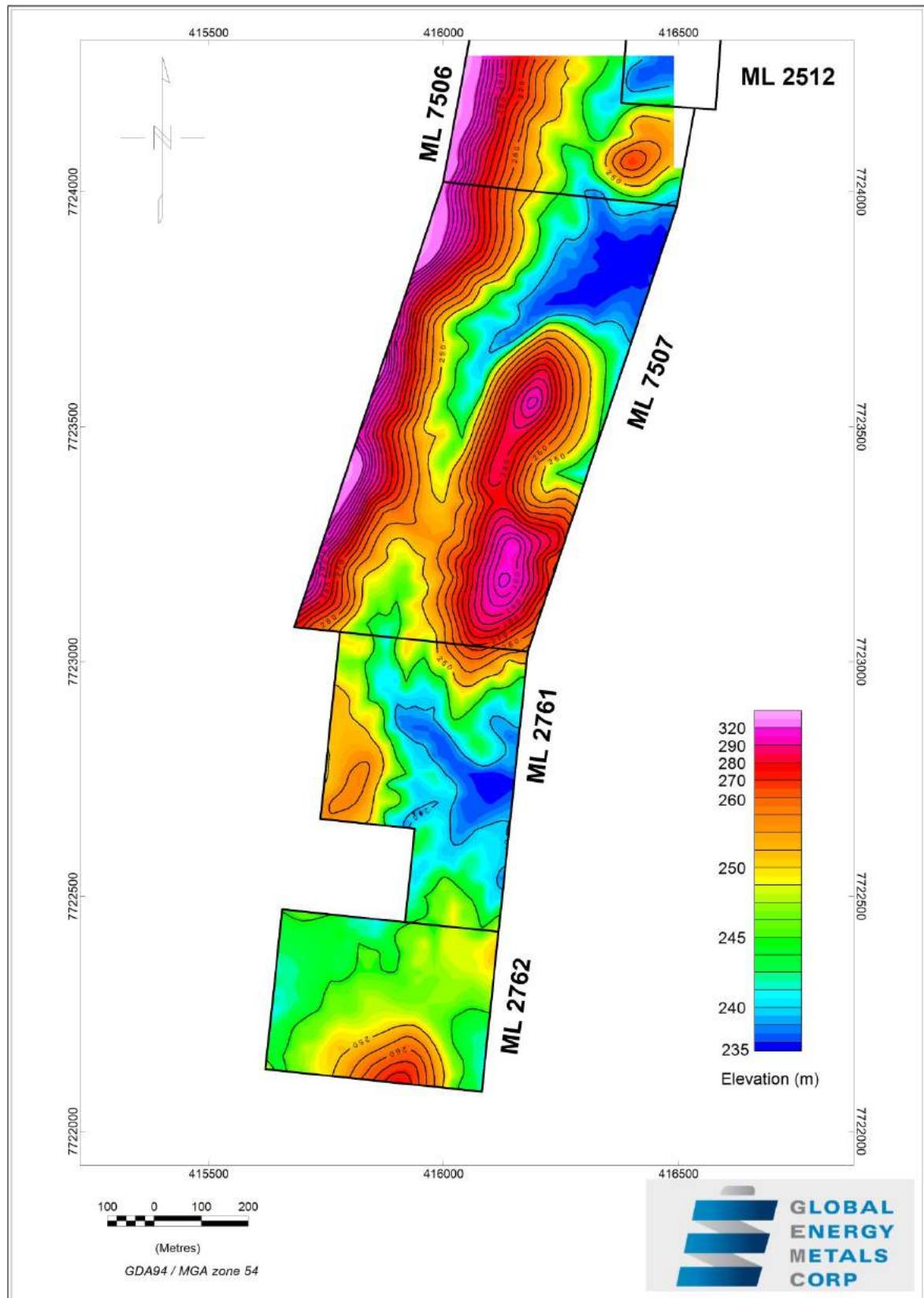


Figure 5-2 Topography of the Millennium Project Leases

## 6 History

The Millennium Project history dates back to the early part of the last century. The first modern exploration program commenced in 1964 with initial diamond drilling by the Carpentaria Exploration Company. There have been various owners in the 1970's and 1980's. The majority of the drilling has taken place since 2013 with more detailed reverse circulation and diamond drilling phases. The history of the Millennium Project is summarised in Table 6-1.

**Table 6-1 Summary of Millennium Project History**

Period	Description
1900's	Federal Copper Mine (24% Cu)
1964	Carpentaria Exploration Company
	Diamond Drilling PDH01-PDH06
1970	Tasman Minerals NL
	Diamond Drilling FD01-FD15
1988-1992	Diversified Minerals NL
	Trenching T1-T14
	Diamond Drilling FD06-FD011
	Metallurgical Testing
2013-2014	Chinalco Yunnan Copper Resources
	Soil Geochemistry
	RC Drilling Q001-Q017
2016	Hammer Metals Ltd
	Geological Mapping
	Rock Chip Sampling
	Reverse Circulation Drilling MIRC001-MIRC023
2018	GEMC/Hammer Metals Ltd
	Rock Chip Sampling
	RC Drilling MIRC024-MIRC026
	Diamond Drilling MIDD001-MIDD010
	Metallurgical Testing

### 6.1 Historical Mining

Historical small-scale prospect mining has occurred, with a number of small shafts and pits scattered along the Federal Copper Mine Leases. The Federal Mine which operated in the early 1900's is reported to have produced 3,977 tonnes grading 24% Cu (966 tonnes of Cu) (Carter 1959).

Cobalt mineralisation was also reported at Federal Cu Mine (Carter 1959). Only

two mines in the Mt. Isa Inlier have yielded commercial Co production. The Success Mine (25 tonnes at 22% Co) and the Queen Sally Mine (26 tonnes at 10.2% Co).

## **6.2 Historical Exploration**

Between 1964 and 1990, a number of companies completed exploration activities over the Mining Leases including Carpentaria Exploration Company, Tasman Minerals NL, Strategic Resources and Diversified Mineral Resources NL ('DMR').

### **6.2.1 Historical Soil Geochemistry**

Soil sampling was completed on the property in 2014 by Chinalco Yunnan Copper Resources Ltd (CYU). A total of 65 samples were collected on 7 lines at 400 metre spacing.

The CYU also collected geochemical using a hand held XRF instrument. The results from 413 samples taken at 25 m along 29 lines at 100m intervals along strike for Cu and As shown in Figures 6-1 and 6-2 respectively clearly show elevated values of Cu and As soil concentrations along the strike of the deposit.

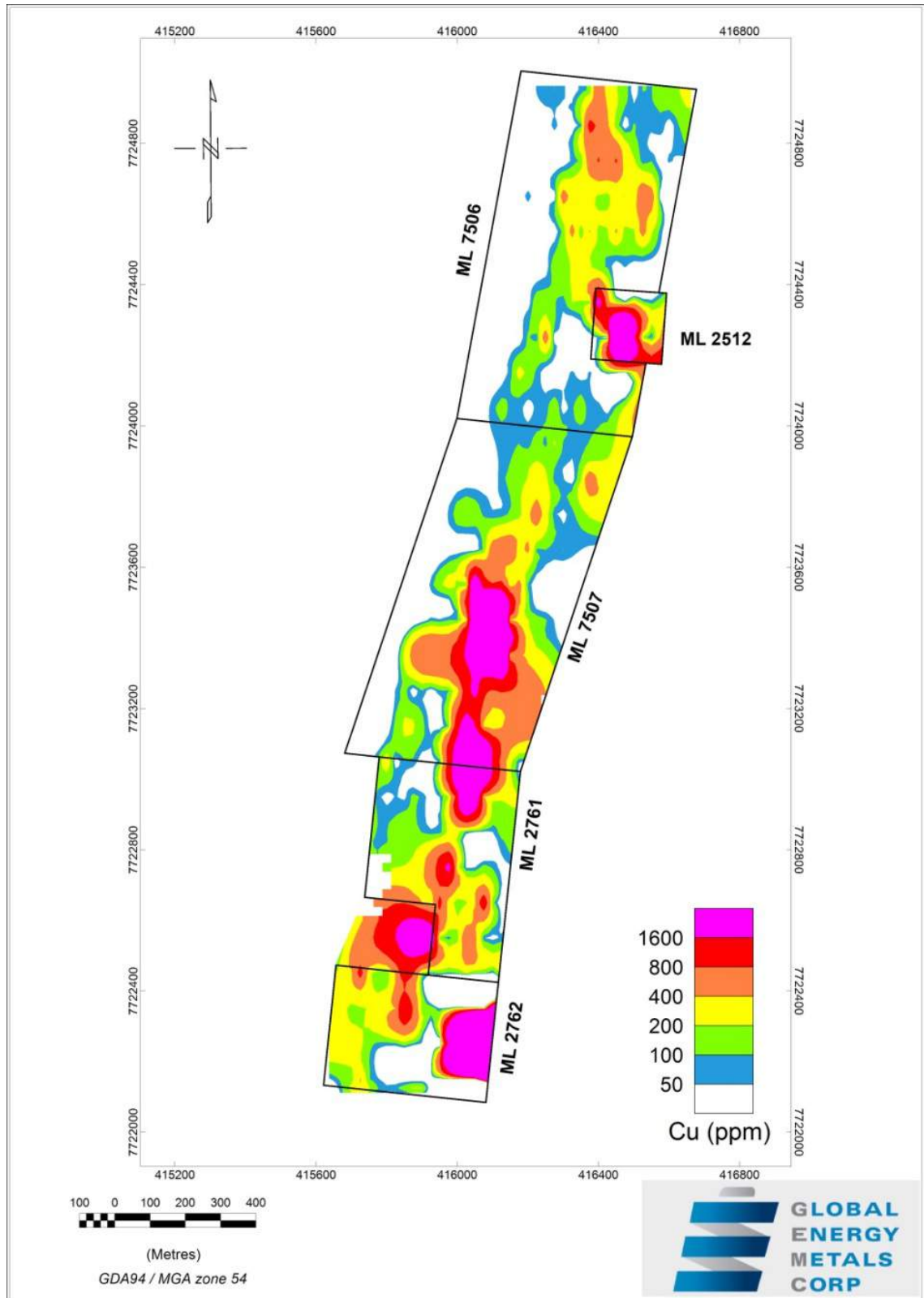


Figure 6-1 Cu Soil Geochemistry using hand held XRF instrument

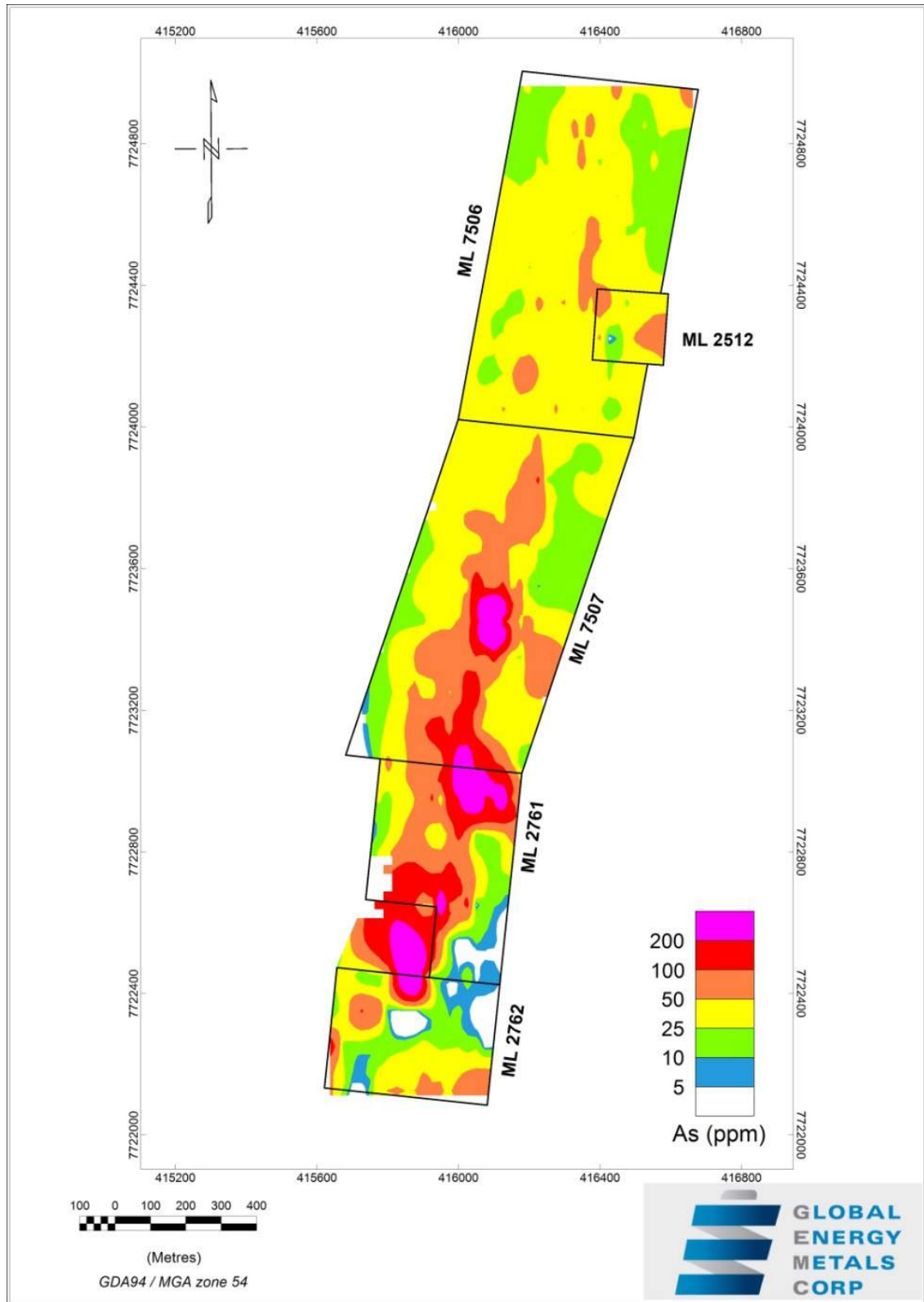


Figure 6-2 As Soil Geochemistry using hand held XRF instrument

## 6.2.2 Historical Rock Chip Sampling

In 2016, Hammer conducted preliminary geological mapping and rock chip sampling. The results of geological mapping are shown in Section 7 of this report. The assay results from rock chip samples are shown in Section 9 of this report.

## 6.2.3 Historical Trenching

In 1988, DMR carried out a program of trenching along the southern portion of the mineralised zone. A total of 18 trenches totaling 571 metres were excavated and sampled. The trench specifications are detailed in Table 6-2 and displayed in Figure 6-3. Intersections of Au, Cu and Co were recorded in each trench.

**Table 6-2 Historical Trench Specifications**

ID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
T1	416019	7722963	249.99	0	101.00	27.00	1988
T1RITA	416063	7723430	260.83	0	96.00	65.00	1988
T2	415998	7722903	242.40	0	136.00	16.00	1988
T2RITA	416078	7723479	260.59	0	126.00	51.00	1988
T3	415988	7722890	240.43	0	121.00	25.00	1988
T4	415989	7722866	239.71	0	136.00	34.00	1988
T5	416042	7723001	257.97	0	98.00	62.00	1988
T5L	415970	7722792	238.86	0	101.00	45.00	1988
T7	415945	7722690	240.23	0	98.00	25.00	1988
T8	415930	7722613	243.81	0	101.00	22.00	1988
T9	415920	7722581	243.87	0	66.00	13.00	1988
T10	415906	7722552	242.96	0	101.00	16.00	1988
T11	415885	7722534	243.30	0	136.00	27.00	1988
T12	415875	7722513	244.32	0	96.00	20.00	1988
T13	415847	7722463	242.08	0	116.00	17.00	1988
T14	415954	7722758	242.06	0	101.00	35.00	1988
TM	415998	7722825	236.95	0	136.00	16.00	1988
TX	415994	7723082	253.86	0	98.00	55.00	1988

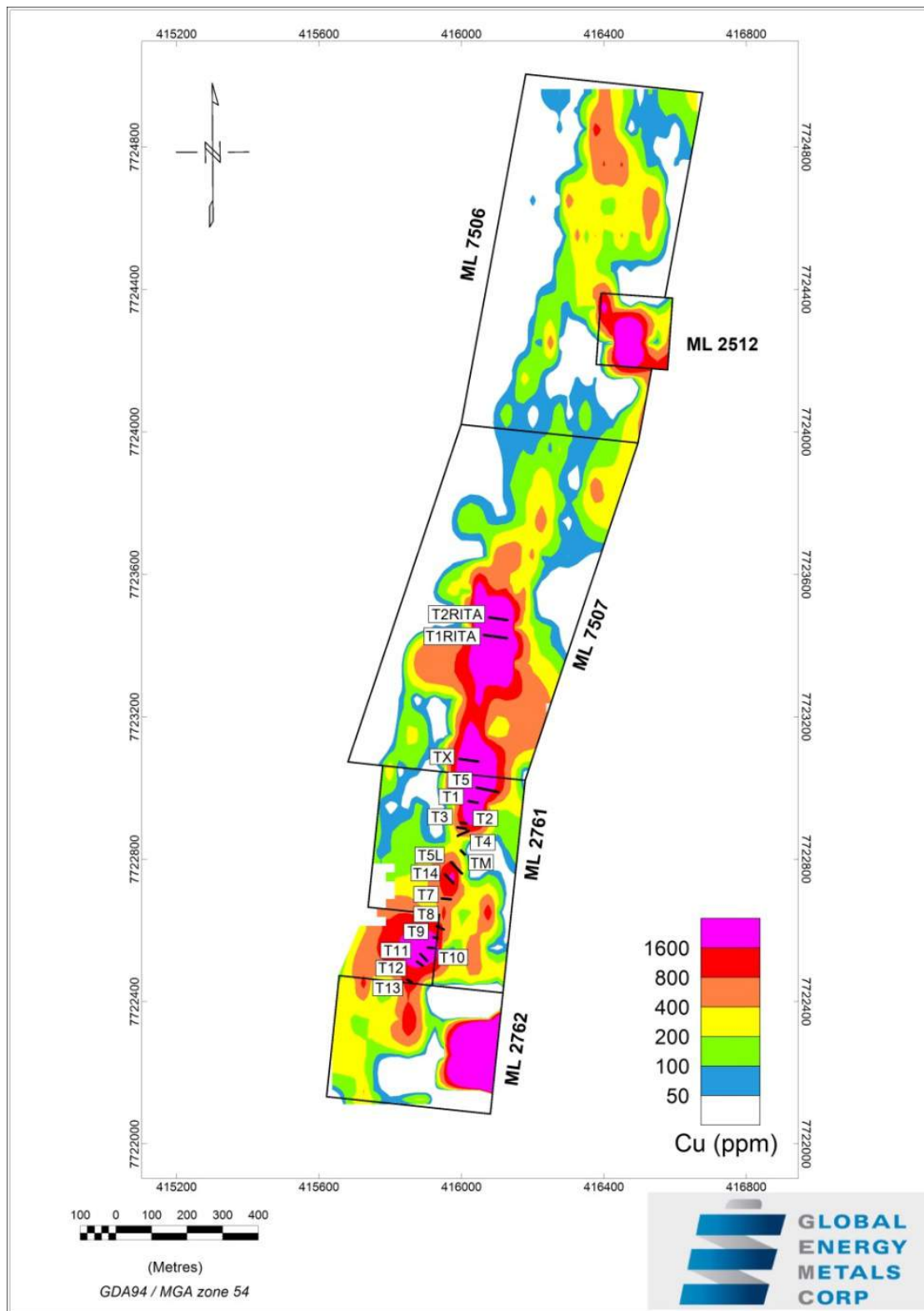


Figure 6-3 Location of Historical Trenches

## 6.2.4 Historical Diamond Drilling

There have been two phases of historical diamond drilling on the Millennium Project leases. In 1970, Tasman Minerals N.L. drilled four holes (FD01 to FD05) totaling 673.60 metres. Strategic Resources N.L. followed-up on from Tasman Minerals work in the early 1970s, with some initial metallurgical studies and one diamond drill hole.

In 1992, DMR drilled a further six diamond holes (FD06 to FD11) totaling 575.50 metres. The historical diamond drill holes were drilled along a 1080 metre strike along the main mineralised zone. The core was analysed for cobalt, copper and gold. The drill hole specifications are displayed in Table 6-3. Historical assay data is available, but information on sample preparation and QA/QC data is not documented. As a result, the FD series drill holes were not included in the historical resource estimate in Section 6.2.7.

**Table 6-3 FD01-FD11 Drill Hole Specification**

BHID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
FD01	416002	7722305	246.97	-78	76.00	183.00	1970
FD02	416011	7723483	247.94	-50	96.00	184.00	1970
FD03	416010	7722256	245.86	-70	96.00	184.00	1970
FD05	416060	7723597	242.09	-50	96.00	122.60	1970
FD06	415989	7723439	246.73	-50	96.00	191.00	1992
FD07	416061	7723537	244.36	-47	94.00	87.30	1992
FD08	415992	7722912	240.78	-50	84.00	109.20	1992
FD09	415959	7722810	240.96	-48	108.00	60.80	1992
FD10	416044	7723481	244.26	-50	84.00	83.20	1992
FD11	415872	7722531	244.35	-44	112.00	44.00	1992

## 6.2.5 Historical RC Drilling

In 1964 Carpentaria Exploration Company Pty Ltd drilled eleven percussion holes totaling 280 metres (PDH1 to PDH6). These drill holes were located along a 450 strike. The drill hole specifications are displayed in Table 6-4. Historical assay data is available, but information on sample preparation and QA/QC data is not documented. As a result, the PDH series drill holes were not included in the historical resource estimate in Section 6.2.7



**Table 6-4 PDH1-PDH6 Drill Hole specifications**

BHID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
PDH1	416008	7722930	246.14	-47	126.00	22.90	1964
PDH1A	416016	7722932	246.57	-47	126.00	25.70	1964
PDH2	416011	7722955	248.37	-45	126.00	23.20	1964
PDH2A	416019	7722949	248.58	-45	306.00	29.30	1964
PDH2B	416043	7722932	248.59	-49	126.00	15.30	1964
PDH3	416023	7722996	249.71	-50	76.00	32.92	1964
PDH4	416007	7723094	259.31	-60	90.00	35.00	1964
PDH4A	415991	7723096	254.73	-60	90.00	31.70	1964
PDH5A	416041	7723222	269.31	-62	90.00	8.30	1964
PDH5B	416027	7723227	264.50	-60	96.00	19.30	1964
PDH6	416060	7723364	264.29	-65	96.00	35.70	1964

### 6.2.5.1 Chinalco Yunnan Copper Resources Ltd RC Drilling

In 2013 and 2014 CYU drilled seventeen reverse circulation drill holes into the Millennium leases totaling 2,815.00 metres. The drill program was designed to infill and extend the previous drilling, both along-strike and down-dip on the main mineralised zone, as well as validating historic drill results FD01-FD011 and PDH1-PDH6. The drill holes (Q001 to Q017) were drilled on a 100m to 200m section spacing along a 1080 metre strike. The drill hole specifications are shown in Table 6-5 and displayed in Figure 6-4. The drilling was completed with large capacity rigs with auxiliary compressors and boosters.

**Table 6-5 Q001-Q017 Drill Hole specifications**

BHID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
Q-001	415873	7722531	244.22	-59	106.00	120.00	2013
Q-002	416013	7723029	256.04	-60	106.00	78.00	2013
Q-003	415985	7722919	240.40	-62	106.00	78.00	2013
Q-004	415956	7722915	239.76	-62	106.00	126.00	2013
Q-005	415950	7723041	248.22	-55	106.00	126.00	2013
Q-006	416029	7723406	251.51	-60	106.00	120.00	2013
Q-007	415992	7723432	246.23	-60	106.00	150.00	2013
Q-008	416044	7723505	243.29	-60	106.00	162.00	2013
Q-009	416008	7723512	246.62	-60	106.00	204.00	2013
Q-010	416081	7723599	240.67	-62	106.00	192.00	2013
Q-011	416045	7723606	242.86	-60	106.00	240.00	2013
Q-012	415958	7722808	241.13	-60	106.00	84.00	2013
Q-013	415940	7722805	241.34	-65	106.00	120.00	2013
Q-014	415768	7722553	247.00	-50	106.00	183.00	2014

Q-015	415835	7722835	250.93	-60	97.00	322.00	2014
Q-016	416012	7723214	261.41	-61	96.00	190.00	2014
Q-017	415991	7723617	251.04	-75	96.00	320.00	2014

Holes drilled by CYU in 2013 and 2014 were surveyed down hole using a gyro instrument at 10m down-hole intervals.

There is limited information available on the method of sampling procedures concerning the Q series drill holes. A sub sample of each metre was collected and placed in numbered chip trays and photographed. CYU inserted certified reference standards at a rate of 0.5 per 100 primary samples. Three certified reference standards were inserted into the sample stream. CYU used GBM999-8 (a sulphide Cu-Au ore from the Pilbara) and GBM301-7 (an oxide Cu material from NSW) supplied by Geostats Pty Ltd (Table 6-6).

**Table 6-6 CYU (Q Series) QC type**

Company	QC Type	Standard	No of Samples	No. QC Samples per 100 Primary Samples
CYU	CSTD	GBM301.7	4	0.2
CYU	CSTD	GBM999.8	7	0.3
CYU	Primary Samples	-	2,592	-

The CYU samples from Q-001-Q017 drill holes were submitted to ALS Townsville for sample preparation. Upon receipt, the ALS technician reconciled the laboratory submission report against the submitted samples, and then placed the samples in sequential order on a trolley before placing them inside the oven. Large RC samples were jaw-crushed to -2mm. A 3kg aliquot was then riffle split off for disc pulverised. A 200-gram split was riffle split from the pulverised sample as a master pulp. CYU drill hole samples underwent gold analysis by 30g fire assay with an AAS finish. A broad suite of elements, including base metals, were analysed for by Aqua Regia digest followed by ICPAES.

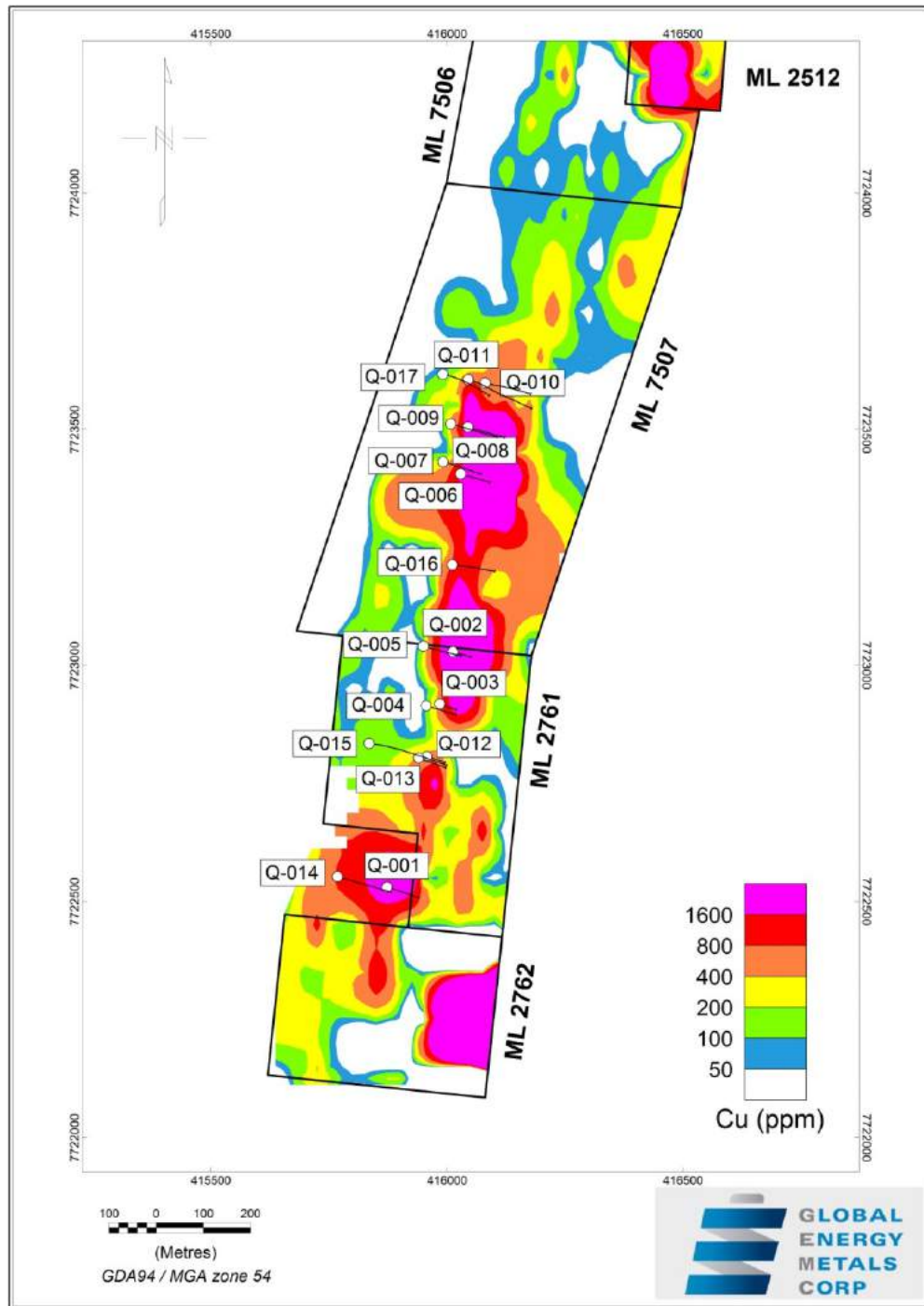


Figure 6-4 Location of Q-001 to Q-017 drill holes

### 6.2.5.2 Significant Mineralised Drill Intersections from Chinalco Yunnan Copper Resources Ltd

The significant drill intersections from the drilling by CYU are displayed in Table 6-7.

**Table 6-7 Significant Mineralised Intersections Q001-Q017**

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Cu Eqv (%)	Cu (%)	Co (%)	Au (g/t)	Ag (g/t)
Q-001	120		16	37	21	1.72	0.51	0.18	0.16	2.66
		incl.	16	31	15	2.25	0.61	0.24	0.22	2.56
Q-002	78		15	22	7	0.46	0.16	0.05	0.03	0.23
			26	27	1	0.58	0.12	0.07	0.01	1.80
			36	41	5	0.57	0.14	0.06	0.05	0.76
			45	46	1	2.28	2.07	0.00	0.01	19.10
Q-003	78		19	22	3	0.41	0.09	0.05	0.01	1.77
Q-004	126		No significant intersections							
Q-005	126		59	70	11	0.51	0.25	0.03	0.09	1.96
		incl.	66	70	4	1.06	0.50	0.06	0.21	3.08
Q-006	120		7	20	13	0.76	0.19	0.09	0.03	-0.20
		incl.	15	19	4	1.74	0.32	0.24	0.03	-0.20
			27	82	55	0.72	0.23	0.07	0.09	0.39
		incl.	30	31	1	1.32	0.90	0.03	0.20	4.90
		and	41	53	12	1.23	0.22	0.15	0.11	0.10
			65	67	2	1.72	0.82	0.10	0.31	1.10
Q-007	150		81	104	23	0.55	0.15	0.06	0.06	1.41
		incl.	91	96	5	1.04	0.06	0.15	0.07	1.54
		and	102	104	2	1.13	0.40	0.10	0.15	0.85
			137	149	12	0.63	0.18	0.07	0.04	0.26
		incl.	142	144	2	1.13	0.26	0.14	0.05	0.35
		and	148	149	1	1.34	0.27	0.17	0.04	0.40
Q-008	162		26	39	13	0.89	0.25	0.08	0.18	-0.20
		incl.	26	32	6	1.24	0.30	0.14	0.11	-0.20
		and	37	38	1	1.28	0.22	0.04	0.91	-0.20
			51	59	8	0.46	0.22	0.03	0.05	-0.10
		incl.	56	57	1	1.01	0.73	0.05	0.00	0.60
			77	133	56	0.50	0.16	0.05	0.05	-0.05
		incl.	77	79	2	1.28	0.61	0.08	0.22	0.30
			85	90	5	2.23	0.83	0.20	0.28	-0.04
Q-009	204		126	127	1	1.01	0.35	0.10	0.06	0.30
			80	82	2	0.96	0.03	0.15	0.05	-0.20
			124	185	61	0.67	0.20	0.07	0.07	0.21
		incl.	124	132	8	1.86	0.52	0.20	0.16	0.19
		and	140	141	1	1.35	0.82	0.04	0.30	0.30
	and	154	164	10	1.19	0.32	0.13	0.12	1.05	

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Cu Eqv (%)	Cu (%)	Co (%)	Au (g/t)	Ag (g/t)
Q-010	192		2	12	10	0.36	0.10	0.04	0.02	0.03
			18	30	12	0.63	0.23	0.05	0.08	0.33
		incl.	19	20	1	1.09	0.66	0.03	0.26	0.80
			46	63	17	0.58	0.17	0.05	0.14	0.03
		incl.	53	54	1	1.34	0.09	0.05	1.08	0.20
		and	62	63	1	1.77	0.13	0.27	0.05	0.20
			80	86	6	0.59	0.25	0.05	0.07	0.42
		incl.	81	82	1	1.03	0.58	0.04	0.19	1.40
			117	118	1	0.52	0.04	0.06	0.08	2.50
			124	163	39	1.12	0.34	0.11	0.09	1.12
		incl.	124	144	20	1.75	0.51	0.02	0.14	2.08
		incl.	125	139	14	2.17	0.65	0.23	0.17	2.76
		and	142	143	1	1.28	0.19	0.17	0.09	0.40
Q-011	240		25	26	1	0.71	0.00	0.11	0.09	0.00
			66	69	3	1.14	0.33	0.11	0.15	0.03
			81	82	1	0.60	0.22	0.05	0.05	3.90
			90	91	1	0.50	0.33	0.02	0.04	1.20
			100	134	34	0.74	0.29	0.04	0.24	0.65
		incl.	102	104	2	1.51	1.02	0.03	0.31	2.50
		and	108	113	5	1.02	0.30	0.10	0.13	0.32
			129	134	5	1.35	0.54	0.03	0.67	1.78
			160	192	32	0.87	0.45	0.05	0.16	0.64
		incl.	160	174	14	1.03	0.64	0.03	0.21	1.30
		and	184	188	4	1.67	0.58	0.14	0.28	0.25
Q-012	84		29	48	19	4.12	1.27	0.38	0.70	0.39
		incl.	37	42	5	9.34	3.67	0.60	2.33	0.92
Q-013	120		46	79	33	1.15	0.48	0.08	0.20	-0.06
		incl.	46	66	20	1.71	0.68	0.13	0.03	0.03
Q-014	183		83	127	44	1.14	0.30	0.13	0.08	n/a
		incl.	104	117	13	2.52	0.53	0.30	0.24	n/a
Q-015	322		140	179	39	0.80	0.24	0.08	0.07	0.13
			142	144	2	1.06	0.13	0.14	0.16	-0.20
			158	179	21	1.20	0.35	0.13	0.10	0.40
Q-016	190		43	48	5	0.79	0.35	0.06	0.11	1.00
		incl.	44	45	1	1.24	0.57	0.07	0.30	1.40
Q-017	320		285	287	2	0.48	0.28	0.02	0.07	1.10
<b>Note</b>										
Intersections selected based on visual estimation at approximately 0.3% CuEqv with included intersections at 1% CuEqv Cut-Offs										
Copper Equivalent Calculation - $CuEq\_% = Cu \% + (Co\_% * 5.9) + (Au\_ppm * 0.9) + (Ag\_ppm * 0.01)$										
Price assumptions used for Equivalence calculation in \$US - Au (\$1330/oz, Ag (\$20/oz), Co (\$27000/t), Cu (\$4600/t)										

### 6.2.5.3 Hammer Metals Ltd RC Drilling

In 2016 Hammer drilled twenty-three reverse circulation holes and extended two CYU holes for a total of 3,533m (MIRC001 to MIRC023 and extensions of Q010 and Q011).

The drilling was designed to infill the CYU drilling to a drill section spacing of 50m to 100m, and test for down-dip continuity along the main mineralised zone. Drill samples were analysed for a broad suite of elements, including Cu, Co, Mo, Ag, Au, Pb and Zn. The drill hole specifications are detailed in Table 6-8 and displayed in Figure 6-5. Drill hole collars are surveyed by ground-based LIDAR using a Leica Viva instrument. Horizontal precision was 0.01m and altitude precision 0.026m.

**Table 6-8 MIRC001-MIRC023 Drill Hole specifications**

BHID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
MIRC001	416159	7723701	237.96	-55	90.00	120.00	2016
MIRC002	416029	7723312	256.23	-55	89.00	138.00	2016
MIRC003	415987	7723118	254.23	-55	88.00	228.00	2016
MIRC004	415988	7722965	244.66	-55	88.00	78.00	2016
MIRC005	415952	7722858	237.33	-55	89.00	100.00	2016
MIRC006	415974	7722792	239.11	-60	89.00	48.00	2016
MIRC007	415901	7722782	246.41	-65	89.00	160.00	2016
MIRC008	415938	7722736	239.67	-55	89.00	84.00	2016
MIRC009	415921	7722673	240.61	-55	87.00	66.00	2016
MIRC010	415788	7722443	243.36	-55	88.00	168.00	2016
MIRC011	415778	7722348	244.05	-55	88.00	144.00	2016
MIRC012	416110	7723702	239.45	-55	88.00	186.00	2016
MIRC013	416050	7723540	242.64	-55	88.00	204.00	2016
MIRC014	416001	7723541	244.68	-60	88.00	265.00	2016
MIRC015	415888	7722675	242.11	-65	88.00	120.00	2016
MIRC016	415766	7722442	244.18	-70	88.00	120.00	2016
MIRC017	415896	7722736	241.39	-60	90.00	132.00	2016
MIRC018	416419	7724250	236.65	-55	90.00	160.00	2016
MIRC019	416086	7723646	239.48	-55	90.00	198.00	2016
MIRC020	416028	7723450	244.86	-55	90.00	132.00	2016
MIRC021	415980	7723452	249.28	-55	90.00	204.00	2016
MIRC022	416006	7723367	249.25	-55	85.00	160.00	2016
MIRC023	415981	7723370	248.49	-66	88.00	210.00	2016

Reverse circulation drill chips were geologically logged in detail by Hammer geologists recording lithology, alteration and mineralisation, weathering, colour, structure, and any other features of the sample to industry accepted standards. Every drilled metre was also qualitatively logged using an Olympus Vanta portable XRF instrument and KT-10 magnetic susceptibility meter.

RC field duplicates were collected by splitting 1 metre sample returns on-site. Standard reference samples and blanks were each inserted into the laboratory submissions at 25 sample intervals.

The 1 metre 3kg riffle split samples, 3kg four metre composites and the sample preparation procedures used by ALS are appropriate for the material being sampled. In the situation where visual inspection and portable XRF suggested an interval was not mineralised then a four metre composite was created using a riffle splitter.

Holes drilled by Hammer were surveyed by Reflex Ezi-trac multi-shot downhole camera at 15m to 30m intervals. Surveys were downloaded from the instrument and imported into a central database. Results were plotted and visually scanned for consistency. Survey records containing very high magnetic intensity or anomalous azimuth deviations were removed from the dataset.

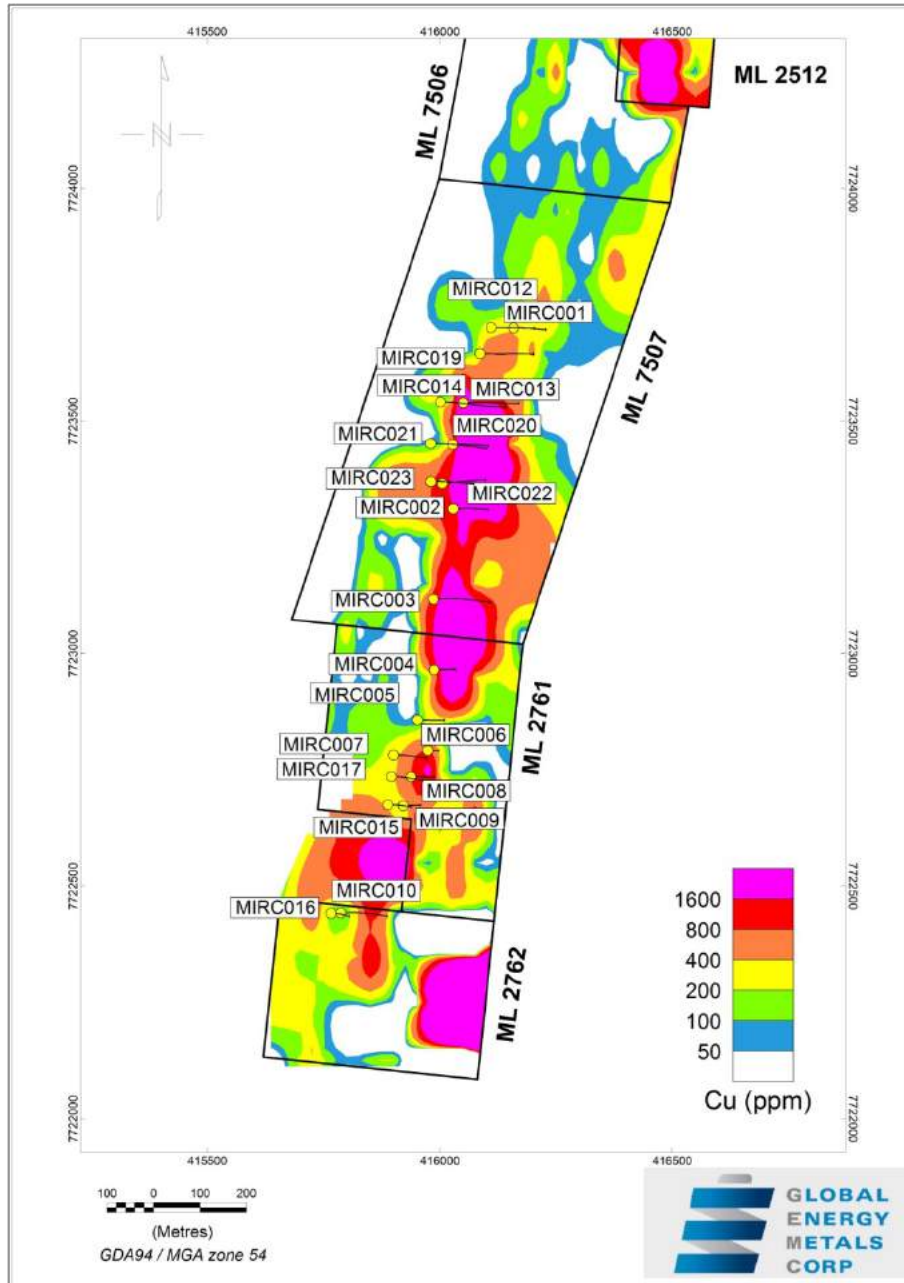


Figure 6-5 Location of MIRC001 to MIRC-023 drill holes

#### 6.2.5.4 MIRC Series Sample collection

The samples were collected in plastic sacks at 1m intervals via a cyclone and split using a riffle splitter to produce a 3kg sample for analysis. This sample was collected in pre-numbered calico bags. A matching sample tag was inserted in each bag which was then tied. RC chips were logged for each metre at the drill rig. A sub sample of each metre was collected and placed in numbered chip trays and photographed.



Hammer samples (MIRC holes) were delivered to ALS Mt. Isa for sample preparation. Upon receipt, the ALS technician reconciled the laboratory submission report against the submitted samples, and then placed the samples in sequential order on a trolley before placing them inside the oven. RC samples were disc pulverised only. Entire samples, regardless of size, were processed, in multiple passes as necessary. A 200-gram split was riffle split from the pulverised sample as a master pulp.

The drill hole samples underwent gold analysis by 50g fire assay with an AAS finish. A broad suite of elements, including base metals, were analysed by multi-acid digestion with hydrofluoric acid followed by a mix of ICPAES, and ICPMS (with REE determination).

Twenty anomalous Cu, Co coarse rejects were re-submitted to ALS for fusion XRF analysis of a suite of ten elements and Ag determination by Aqua Regia digest with ICPAES finish.

#### **6.2.5.5 MIRC Series Duplicates Blanks and Standards**

The drilling programs carried out at Millennium by Hammer have included QA/QC procedures using certified standards and field duplicate samples. Field duplicates and standard control samples were used at a frequency of 3 field duplicates, 4.5 certified standards and 4.5 Certified Blanks per 100 samples (Table 6-9).

**Table 6-9 Hammer (MIRC Series) QC type**

Company	QC Type	Standard	No of Samples	No. QC Samples per 100 Primary Samples
HMX	CSTD	OREAS CRM27b (Blank)	92	4.5
HMX	CSTD	S3	93	4.5
HMX	Field Duplicates	-	62	3
HMX	Primary Samples	-	2,080	-

Hammer used S3, a certified reference standard created by Ore Research & Exploration Pty Ltd from RC reject material from the Kalman Cu, Au, Mo, Re deposit situated 55km to the south. Kalman was used as it has a similar style of mineralisation and host matrix to Millennium. The S3 copper standard was expected to be of similar tenor as the average grade of the Millennium copper mineralisation (Table 6-10).

**Table 6-10 Hammer (MIRC Series) Standard S3 expected value and standard deviation**

Standard ID	Description	Cu ppm	Cu SD	Mo ppm	Mo SD	Au ppb	Au SD
S3	High Cu	5059	81	150	8	497	21

Graphical results for the standards used in the MIRC series holes are reported by Haren (2016). In general, the standard results plotted around the standard value with no significant trends noted.

Hammer inserted blank reference material standard OREAS CRM27b into the sample stream at a rate of 4.5 per 100 samples (Table 6-9).

Duplicate samples were submitted for assay along with standards. The 1.5kg duplicates were decanted from the 3kg primary samples collected at each metre directly from the riffle jig mounted on the drill rig sample return. A duplicate sample analysis was reported by Haren (2016). No significant issues were identified regarding the results from field duplicate QA/QC.

Twenty anomalous Cu and Co coarse reject samples from ALS were re-submitted to ALS for fusion XRF analysis of a suite of ten elements, and Ag determination by Aqua Regia digest with ICPAES finish. Correlation between 4 acid digest/ICP and fusion/XRF was good for Co, Cu and As, with no systematic bias observed. Correlations between original 4 acid/ICP and duplicate 4 acid/ICP results for Ag were also good, with no systematic bias.

#### **6.2.5.6 MIRC Series Check Umpire Assays**

Forty-five samples with anomalous geochemistry were selected for umpire assay at Intertek. These were riffle split from the ALS coarse rejects and prepared by ALS as pulps for dispatch to Intertek. Comparable methods were applied, including gold analysis by 50g fire assay with an AAS finish and multi-acid digestion (with hydrofluoric acid) followed by ICPOES for Ag, Co, Cu, Pb and Zn (Table 6-11 & Table 6-12).

Good correlations, with no systematic bias, were observed for all elements. Gold shows good correlation, with two outliers indicating a degree of nugget effect within the drill samples. The graphical results for the umpire assays used in the MIRC series holes are reported by Haren (2016).

**Table 6-11 Correlation Coefficients for Umpire Assay**

Data	Statistic	Au ppm	Ag ppm	Co ppm	Cu ppm	Pb ppm	Zn ppm
All Assays	Count	45	45	45	45	45	45
	Correlation	0.885	0.965	0.989	0.995	1.000	0.995
Assays >10*LDL	Count	30	8	45	45	24	30
	Correlation	0.846	0.953	0.989	0.995	1.000	0.995
>10*LDL = greater than ten times the lower detection limit							

**Table 6-12 Intertek Umpire Assay Methods and Detection Limits**

Lab	Element	Lab Method	No Samples	Units	Lower Detection	Upper Detection
Intertek	Ag	4A/OE	45	ppm	0.5	-
Intertek	Co	4A/OE	45	ppm	1	-
Intertek	Cu	4A/OE	45	ppm	1	-
Intertek	Pb	4A/OE	45	ppm	5	-
Intertek	Zn	4A/OE	45	ppm	1	-
Intertek	Pb	4AH/OE	45	ppm	50	-
Intertek	Au	FA50/AA	45	ppm	0.005	-

#### **6.2.5.7 QA/QC Conclusions**

Hammer has established a comprehensive QA/QC program which is used for all their drilling programs. Field duplicates and certified standards were used to monitor the accuracy of field and laboratory sampling and assaying. The field duplicates were taken at regular intervals and results accurately reflected the original assay. A recognised laboratory was used for analysis of samples, however no internal laboratory repeats/duplicates have been analysed as part of the data validation process. The QA/QC results confirm the suitability of the drilling data for use in the historical mineral resource estimation.

The QA/QC assessment reported by Haren (2016) concludes that all sampling, sample preparation, sample security and analytical procedures conform to industry best practice and are adequate to give a representative picture of the nature of the mineralised body and its host rocks.

#### **6.2.5.8 MIRC Series Bulk Density Measurement**

Sixty RC drill samples were submitted to ALS for specific gravity determination by method OA-GRA08b (Specific Gravity on pulps using pycnometer). Haren (2016) examined the bulk density determinations and found no correlation between elements of interest and density.

The Millennium mineralisation is hosted almost entirely in fresh rock however the analysis of density results suggests that there is a small zone of oxidised material between surface and 20m depth and a transition zone between 20m and 40m depth. The topography surface was translated down to create the base of complete oxidation (BOCO) and the top of fresh rock (TOFR). Within the mineralisation envelopes 44 bulk density values were used to determine an average bulk density of 2.53 t/m<sup>3</sup> for oxide material, 2.63t/m<sup>3</sup> for transition material and 2.68t/m<sup>3</sup> for fresh material. The bulk density was assigned as a dry bulk density.

#### **6.2.5.9 Significant drill intersections from the drilling by Hammer Metals Ltd**

The drill samples were analysed for a broad suite of elements, including Cu, Co, Mo, Ag, Au, Pb and Zn. The significant drill intersections from the drilling by Hammer are displayed in Table 6-13.

**Table 6-13 Significant Mineralised Intersections MIRC001-MIRC023**

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Cu Eqv (%)	Cu (%)	Co (%)	Au (g/t)	Ag (g/t)
MIRC001	120		47	64	17	0.62	0.25	0.05	0.04	0.50
		incl.	47	50	3	1.20	0.05	0.11	0.06	0.40
MIRC002	138		25	45	20	0.39	0.17	0.03	0.05	1.12
MIRC003	228		90	93	3	0.99	0.03	0.16	0.00	0.07
		incl.	90	91	1	2.34	0.02	0.39	0.00	0.03
			203	209	6	0.67	0.02	0.11	0.00	0.04
		incl.	204	205	1	1.86	0.02	0.31	0.01	0.03
MIRC004	78		15	30	15	0.41	0.20	0.03	0.02	1.12
		incl.	17	18	1	1.11	0.86	0.03	0.01	9.31
MIRC005	100		36	37	1	0.32	0.21	0.02	0.00	0.07
MIRC006	48		6	10	4	0.38	0.13	0.03	0.04	0.05
MIRC007	160		65	72	7	0.78	0.30	0.06	0.12	0.10
		incl.	67	68	1	1.21	0.28	0.13	0.18	0.10
			98	111	13	1.12	0.41	0.10	0.10	0.33
		incl.	98	106	8	1.51	0.63	0.12	0.17	0.51
			110	111	1	1.16	0.08	0.18	0.00	0.10
MIRC008	84		10	16	6	0.72	0.15	0.09	0.05	0.03
		incl.	10	11	1	1.77	0.03	0.29	0.02	0.02
		and	14	15	1	1.12	0.33	0.11	0.19	0.05
			44	47	3	0.48	0.20	0.04	0.03	0.10
		incl.	45	46	1	0.76	0.35	0.06	0.05	0.16
MIRC009	66		20	38	18	0.95	0.23	0.10	0.17	0.41
		incl.	28	34	6	1.77	0.29	0.19	0.38	0.70
		incl.	28	30	2	3.73	0.51	0.38	1.10	1.46
MIRC010	168		39	61	22	0.67	0.18	0.08	0.02	0.62
		incl.	39	42	3	1.13	0.15	0.16	0.02	1.01
		and	45	47	2	1.14	0.32	0.13	0.03	1.64
		and	59	61	2	1.70	0.25	0.24	0.05	0.56
MIRC011	144		115	116	1	0.50	0.25	0.04	0.01	0.78
MIRC012	186		45	49	4	0.73	0.55	0.16	0.08	1.30
		incl.	45	46	1	1.26	1.00	0.03	0.09	1.90
			137	140	3	0.77	0.37	0.06	0.03	1.10

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Cu Eqv (%)	Cu (%)	Co (%)	Au (g/t)	Ag (g/t)
MIRC013	204		35	42	7	0.72	0.08	0.10	0.03	0.03
		incl.	36	37	1	1.37	0.05	0.22	0.01	0.02
			53	97	44	0.82	0.17	0.10	0.07	0.13
		incl.	53	56	3	0.75	0.14	0.10	0.04	0.20
		incl.	60	62	2	0.93	0.26	0.09	0.11	0.30
		incl.	68	70	2	0.52	0.17	0.04	0.12	0.30
		incl.	73	97	24	1.17	0.23	0.15	0.09	0.10
		incl.	73	77	4	3.64	0.46	0.51	0.16	0.20
		incl.	95	97	2	2.02	0.76	0.17	0.28	0.30
			114	120	6	0.51	0.14	0.04	0.12	0.30
			132	146	14	1.33	0.55	0.11	0.14	1.95
		incl.	133	139	6	2.12	0.68	0.21	0.20	2.70
incl.	143	144	1	1.68	1.17	0.03	0.24	3.10		
MIRC014	265		98	100	2	0.90	0.00	0.14	0.05	0.30
			149	211	62	0.64	0.17	0.07	0.09	0.40
		incl.	149	161	12	1.85	0.57	0.19	0.19	0.89
		incl.	149	154	5	2.21	0.88	0.18	0.31	1.40
		and	157	161	4	2.33	0.44	0.30	0.14	0.60
			193	194	1	1.10	0.11	0.16	0.06	0.25
MIRC015	120		38	81	43	0.63	0.22	0.06	0.08	0.45
		incl.	62	80	18	1.23	0.40	0.11	0.17	0.72
		incl.	63	65	2	2.66	0.88	0.14	0.11	0.25
		and	70	80	10	1.42	0.47	0.15	0.04	1.10
MIRC016	120		69	86	17	0.34	0.15	0.03	0.00	1.57
		incl.	78	79	1	1.49	0.12	0.23	0.01	2.90
MIRC017	132		56	96	40	0.82	0.32	0.07	0.13	0.30
		incl.	60	65	5	1.90	0.82	0.15	0.21	0.32
		and	70	73	3	1.15	0.18	0.08	0.57	0.25
		and	84	92	8	1.64	0.79	0.11	0.24	0.44
MIRC018	160	No intercepts of significance								
MIRC019	198		33	36	3	0.66	0.21	0.03	0.30	0.52
			50	107	57	0.67	0.15	0.04	0.19	11.56
		incl.	50	63	13	0.81	0.20	0.03	0.28	18.81
		incl.	50	56	6	0.88	0.17	0.02	0.26	39.12
		and	80	81	1	1.08	0.01	0.01	1.08	5.60
		and	87	92	5	1.37	0.49	0.12	0.17	0.25
		and	101	103	2	3.07	0.10	0.04	1.02	179.90
			126	157	31	0.56	0.26	0.04	0.07	1.36
incl.	138	140	2	1.71	1.09	0.04	0.35	5.00		

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Cu Eqv (%)	Cu (%)	Co (%)	Au (g/t)	Ag (g/t)
MIRC020	132		40	43	3	0.48	0.06	0.04	0.05	10.18
			46	47	1	0.69	0.39	0.03	0.11	0.80
			51	64	13	0.42	0.06	0.02	0.27	0.33
			75	83	8	0.67	0.28	0.05	0.11	0.28
		incl.	81	83	2	1.32	0.46	0.12	0.17	0.38
			87	89	2	0.52	0.15	0.06	0.04	0.25
			111	112	1	0.43	0.07	0.06	0.02	0.25
			117	118	1	0.62	0.29	0.05	0.03	0.25
MIRC021	204		87	92	5	0.40	0.10	0.03	0.07	6.57
		incl.	90	91	1	1.04	0.23	0.06	0.26	21.90
			108	188	80	0.42	0.14	0.04	0.04	0.40
		and	108	109	1	1.18	0.81	0.01	0.31	0.80
		and	126	129	3	1.00	0.44	0.06	0.20	0.63
		and	144	145	1	1.02	0.48	0.07	0.12	0.60
		and	173	178	5	1.24	0.21	0.17	0.03	0.55
		and	186	188	2	0.96	0.45	0.07	0.09	1.65
MIRC022	160		13	14	1	0.32	0.12	0.03	0.01	0.25
			18	21	3	0.61	0.06	0.07	0.17	0.25
			26	29	3	0.89	0.38	0.05	0.23	0.25
		incl.	27	28	1	1.46	0.67	0.07	0.44	0.25
			39	79	40	0.59	0.26	0.04	0.12	0.83
		incl.	70	77	7	1.31	0.61	0.06	0.38	0.73
MIRC023	210		61	63	2	0.46	0.14	0.05	0.04	0.25
			71	72	1	0.92	0.36	0.05	0.27	0.25
			115	148	33	1.29	0.22	0.16	0.10	1.00
		incl.	116	121	5	2.11	0.66	0.19	0.34	3.84
		and	128	136	8	2.19	0.08	0.35	0.04	0.33
<b>Note</b>										
Intercepts selected based on visual estimation at approximately 0.3% CuEqv with included intercepts at 1% CuEqv Cut-Offs										
Copper Equivalent Calculation - $Cu\_ \% = Cu\_ \% + (Co\_ \% * 5.9) + (Au\_ ppm * 0.9) + (Ag\_ ppm * 0.01)$										
Price assumptions used for Equivalence calculation in \$US - Au (\$1330/oz, Ag (\$20/oz), Co (\$27000/t), Cu (\$4600/t)										

The historical drilling indicates higher grade mineralisation is currently confined along a 960 metre strike between drill holes MIRC009 and Q011 (Figure 6-6). Drilling density along the immediate strike of the high-grade core is, however, insufficient to confidently confine the mineralisation to this strike extent.

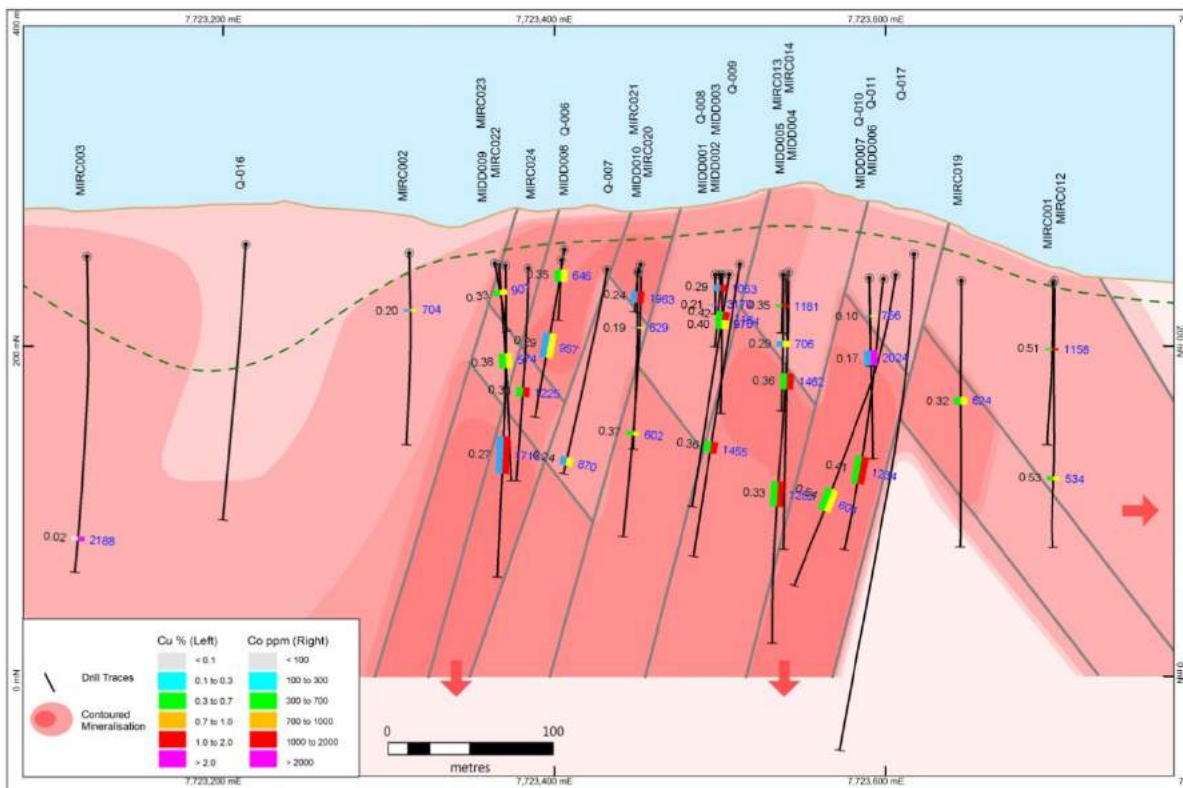


Figure 6-6 Long Section showing Q001-Q017 and MIRC001-MRC023

### 6.2.6 Historical Metallurgical Testing

DMR completed preliminary metallurgical testing on drill core from the FD series drill holes. The test work was completed at the Hydrometallurgy Research Laboratories in Brisbane in January 1993.

High grade copper and cobalt concentrates were recovered from samples collected from the northern parts of the orebody that consisted of primary and secondary sulphides in feldspathic quartzite host rock cut by calcite veins. The investigation demonstrated the ability to produce a Cu and Co concentrate with attractive grades and recoveries of saleable Co and Cu concentrates.

### 6.2.7 Historical Mineral Resource

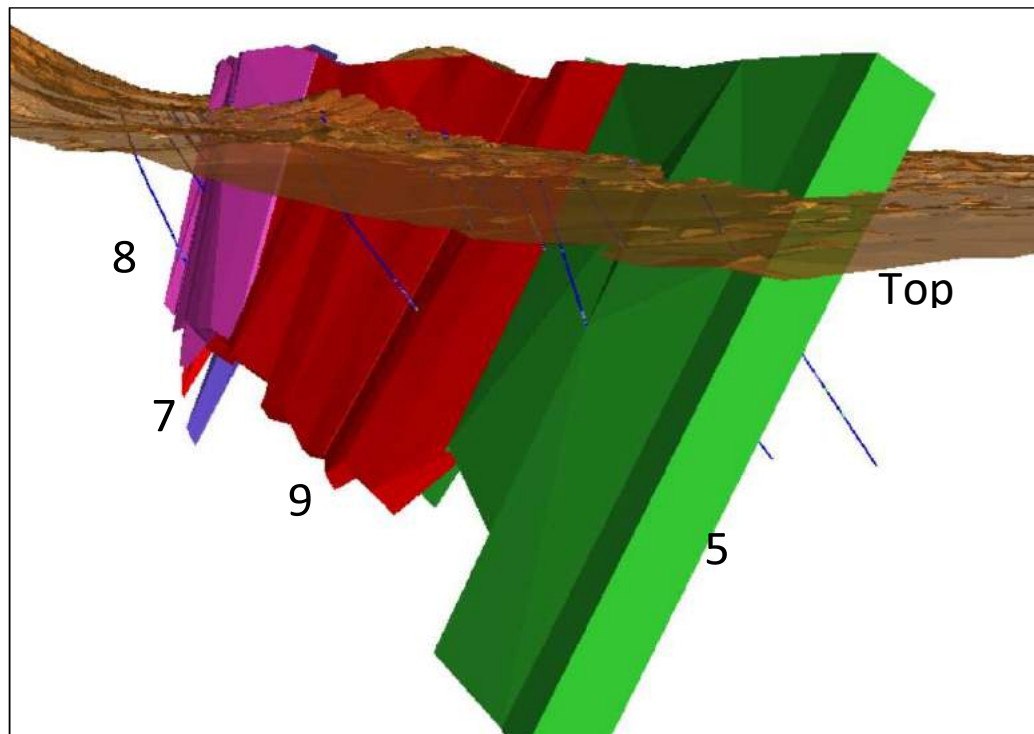
The mineral estimates described in the following paragraphs are reported according to JORC guidelines and do not comply with NI 43-101 reporting requirements and associated CIM definition standards. The authors caution that a qualified person has not done sufficient work to validate the historical estimates, and KCL is not treating the historical estimates as current mineral resources or reserves. KCL has not completed a detailed review of the historical resource or completed a new resource estimate in this 43-101 technical report.



A mineral resource estimate was prepared and reported by Haren (2016) according to JORC guidelines. The drill data used for this mineral resource estimation was restricted to the CYU (Q001-017) and Hammer drill holes (MIRC001-MIRC023). Historical drill holes PDH-01 to PDH06 and FD001-FD011 were excluded from the Haren (2016) mineral resource due to the reliability and absence of QA/QC protocol in the historical assay database. Much of the information presented in Section 6.2.7 is directly excerpted from the Haren (2016) JORC report.

#### **6.2.7.1 Geology and Mineralisation Interpretation**

A sectional interpretation of mineralisation was supplied by Hammer to guide digitising and wireframe creation by Haren (2016). The mineralisation envelopes were created using a broad 0.50% CuEq grade cut-off with consideration given to allowing structural continuity.



**Figure 6-7 3-Dimensional view of mineralisation domains and drill holes looking north-east**

Mineralisation outlines were extrapolated to half drill hole spacing or to a maximum distance of 150m from drill hole intersections if they were not supported by adjacent drill holes. The interpreted sectional outlines were manually triangulated to form wireframes as shown in Figure 6-7. To form ends to the wireframes, the end section strings were copied to a position midway to the next section or to a maximum of 50m from the end section and adjusted to match the dip, strike and plunge of the zone. The wireframes were validated to ensure they

were suitable for estimation with no holes or crossing triangles. Four domains were defined by Haren (2016), 5, 7, 8 and 9.

Weathering surfaces were created by translating the surface topography 20m down for the base of complete oxidation (BOCO) and 40m down for the top of fresh rock (TOFR), this is likely to be sufficient for this mineral resource but in the future should be completed by bore hole logging. This was done to honor the variation in density observed from the statistical analysis. The wireframes used are presented in Table 6-14. No lithological surfaces were interpreted by Haren. The LiDAR survey was used to create a topographic surface.

**Table 6-14 Weathering and Density Domains**

Weathering	WEATH	Density	Zone	Wireframe
Oxide	100	2.53	Between surface and BOCO	topo_160921 tr/pt, boco tr/pt
Transition	200	2.63	Between BOCO and TOFR	boco tr/pt, tofr tr/pt
Fresh	300	2.68	Below TOFR	tofr tr/pt

**6.2.7.2 Compositing and Statistics**

Samples from within the mineralisation envelopes were used to conduct sample length analysis by Haren (2016). The majority of samples were 1 m in length. The histogram of sample length for Millennium is presented in Figure 6-8.

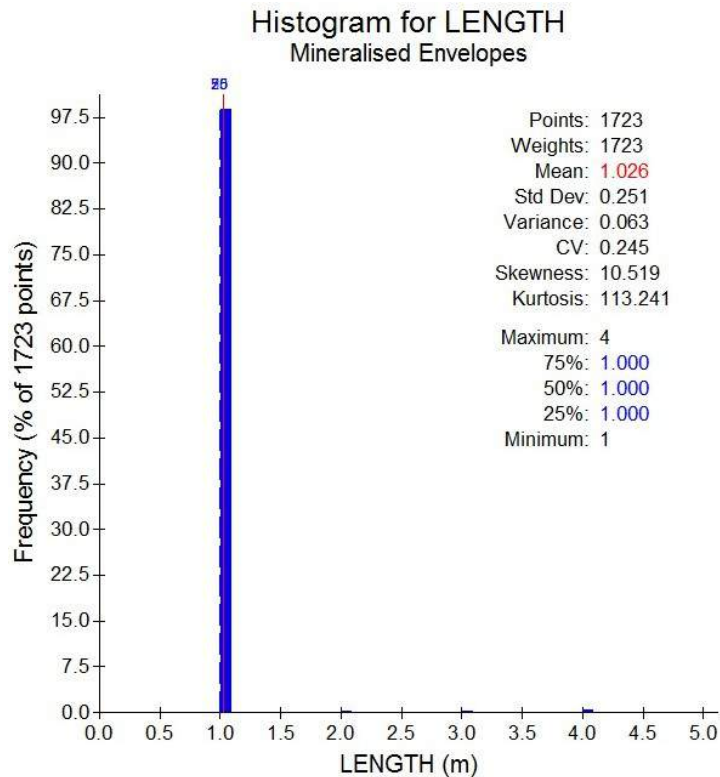


Figure 6-8 Histogram of Sample Lengths within the Mineralised Envelopes

Correlation analysis was performed on the samples within the mineralised envelopes with no significant correlations evident. Correlation co-efficient values are shown in Table 6-15.

Table 6-15 Correlation Coefficient Analysis

	Ag ppm	Au ppm	Co pct	Cu pct	Pb ppm	Zn ppm	Density
Ag ppm	1	0.41	-0.01	0.02	0.19	0.09	-0.55
Au ppm		1	0.18	0.44	0.03	0.04	0.36
Co pct			1	0.32	-0.02	-0.03	0.29
Cu pct				1	0.01	0.08	0.31
Pb ppm					1	0.23	0.06
Zn ppm						1	-0.08
Density							1

Datamine software was used to extract variable length 1m down-hole composites within the mineralisation domains. The composites were checked for spatial correlation with the domains. Composites were imported into Supervisor software for analysis. The copper equivalent was calculated for each composite using the formula:

$$CuEq = Cu \% + (Co \% \times 5.9) + (Au ppm \times 0.9) + (Ag ppm \times 0.01)$$

### **6.2.7.3 Top Cuts**

Analysis of statistics, histograms, log probability plots and disintegration for all elements within the mineralised domains suggested that the elements required top-cutting to reduce the influence of a few outliers.

### **6.2.7.4 Geostatistical Analysis**

The variography completed by Haren (2016) used Supervisor software. Variography was completed for Ag, Au, Co, Cu, Pb and Zn within the four mineralisation envelopes. A normal score transform was used before interpreting the variogram models with a back- transform applied to generate parameters for estimation.

To determine the nugget variance of each of the elements, down-the-hole variograms were generated with a 1 m lag. Directional variograms were then generated in the plane of the lodes. The variogram models were generally difficult to interpret due to the wide spacing when compared with the ranges of continuity. In all variables the minor direction was difficult to interpret and set based on the observed narrow structure of the mineralisation. The structure of the variogram models indicates the drill spacing is sufficient to assume grade continuity along strike and down dip.

The variograms parameters are presented in Appendix C.

### **6.2.7.5 Mineral Resource Estimation**

#### **6.2.7.5a Block Model**

A block model was created to encompass the Millennium mineralisation with a block size of 5m X by 25m Y by 10m Z with sub-blocks of 1.0m by 5.0m by 2.0m. The block size was chosen to reflect both the dimensions of the mineralisation and drill hole spacing combined with the results of a kriging neighbourhood analysis to minimise conditional bias. Block model dimensions are presented in Appendix C.

The parent block size was selected to ensure a realistic grade estimate was achieved in each block considering the average drill hole spacing. Sub-celling was set at a level to provide sufficient resolution of the blocks compared to the wireframes.

The Millennium block model was divided into north and south sub-models to reflect the strike and dip of the interpreted mineralisation. The north model has a strike of 020° and dips at 78° to the west, the south model has a strike of 020° and dips at 66° to the west. The rotated model extents at 200mRL with the north and south divide are illustrated in Figure 6-9.

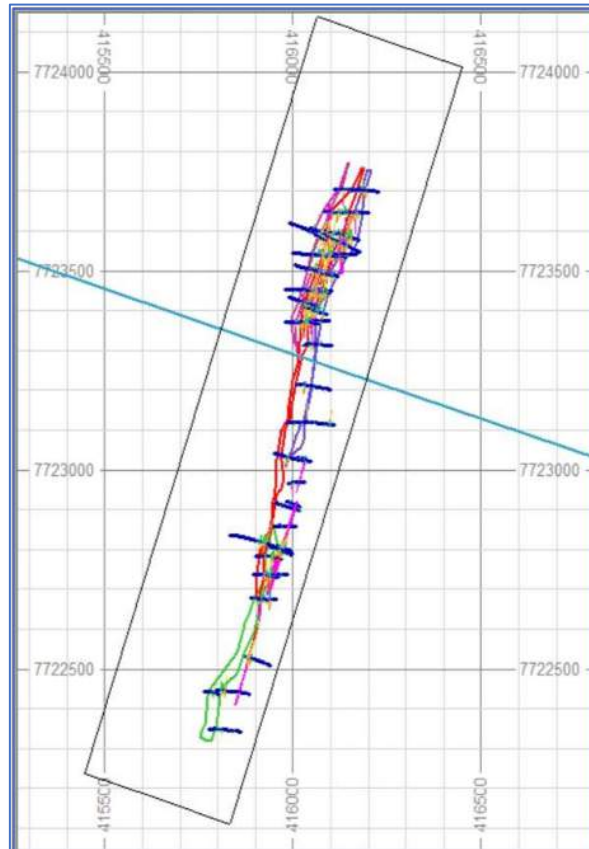


Figure 6-9 Model extents at 200mRL with north – south divide

### 6.2.5.7b Grade Estimation

For all lodes in the Millennium deposit, the wireframe interpretations were used as soft boundaries in the interpolation. This allowed the contiguous mineralisation to access all composites for grade estimation. The ordinary kriging (OK) algorithm was selected for grade interpolation.

Datamine dynamic anisotropy was used to orientate each parent cells search ellipse to select data for interpolation and orient the variogram model. Kriging neighbourhood analysis testing was used to guide the selection of estimation parameters and indicated that the ranges obtained from the variogram models would be suitable for defining the search ellipse dimensions used in the estimate. Each block was discretised using 5 points in X by 5 points in Y by 5 points in Z. The kriging parameters are presented in Appendix C.

### 6.2.5.7c Density

The Millennium mineralisation is hosted almost entirely in fresh rock however the analysis of density results suggests that there is a small zone of oxidised material between surface and 20m depth and a transition zone between 20m and 40m depth. The topography surface was translated down to create the base of

complete oxidation (BOCO) and the top of fresh rock (TOFR). Within the mineralisation envelopes 44 bulk density values were used to determine an average bulk density of 2.53 t/m<sup>3</sup> for oxide material, 2.63 t/m<sup>3</sup> for transition material, and 2.68 t/m<sup>3</sup> for fresh material. The bulk density was assigned as a dry bulk density.

**6.2.5.7d Model Validation**

A three-step process was used to validate the grade estimation. Firstly, a qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. Overall the assessment indicated that the trend of the modelled grade was consistent with the drill hole grades for each element.

The second process used a quantitative assessment of the estimate by comparing the global average grades of the blocks estimated in the first search pass to the composite data. The results are shown in Appendix 2. Some of the domains show large variations. This is due to the mixed distributions in some elements. The trend validation reflects these variations.

Composite grades and model grades were compared using 50m slices in a north-south direction using the first search pass blocks. These trend plots confirm that general grade trends are honoured by the model.

The validation process results show good correlation between the composite grades and the block model grades for the comparisons by northing. The trends shown by the composite data are honoured by the block model for each element within each domain (Table 6-16).

The comparisons show the effect of the interpolation, which results in smoothing of the block grades compared to the composite grades.

**Table 6-16 Global Validation by Element**

Statistic	Ag ppm	Au ppm	Co %	Cu %	Pb ppm	Zn ppm
Samples	1,767	1,767	1,767	1,767	1,767	1,767
Raw Mean	0.93	0.08	0.05	0.19	76.76	41.7
Top-cut	23.00	1.30	1.00	1.70	3,000	600
Top-cut Mean	0.69	0.07	0.05	0.19	26.86	37.36
Model	0.79	0.07	0.05	0.19	37.66	46.92
% Difference Raw Mean	-15%	-13%	0%	-2%	-51%	13%
% Difference Top-cut Mean	15%	-7%	1%	3%	40%	26%

### **6.2.5.8 Mineral Resource Classification**

The Millennium Mineral Resource was classified on the basis of data quality, sample spacing and grade and geological continuity of the mineralised domains. The deposit shows a generally consistent continuity of mineralisation within reasonably well-defined geological constraints characteristic of the local geology. The drill hole spacing throughout the project is approximately 100 to 120m along strike with some 50m to 60m infill drilling. Drill spacing down dip is variable with 10 of the 23 interpretation sections having one drill hole only.

The drill spacing is sufficient to allow the grade intersections to be modelled into reasonably coherent wireframes within a broader structural corridor.

The geological and mineralisation continuity has been assumed with sufficient confidence to allow the majority of mineralisation to be classified as an Inferred Mineral Resource. Haren (2016) considers the data underlying the estimate to be reliable. Where significant extrapolation of past drilling has occurred, the material remains unclassified.

Infill drilling along strike and down-dip will enable the continuity modelling quality to be increased for each variable. In particular the Cu variogram modelling was difficult to interpret and the addition of drilling on a spacing of 50m or closer will improve the understanding of Cu continuity and allow a more confident interpretation of short scale continuity between drill holes. This would, therefore, allow a higher classification of Indicated or Measured.

The reporting of extrapolation of the domains along strike and down dip has been limited by the application of selection wireframes to define reportable Mineral Resources for each domain. The boundary between Inferred and unclassified material is shown in Figure 6-10.

The classification strategy is:

1. Measured: No material;
2. Indicated: No material;
3. Inferred: Material falling within the Inferred wireframe; and
4. Unclassified: Remaining material.

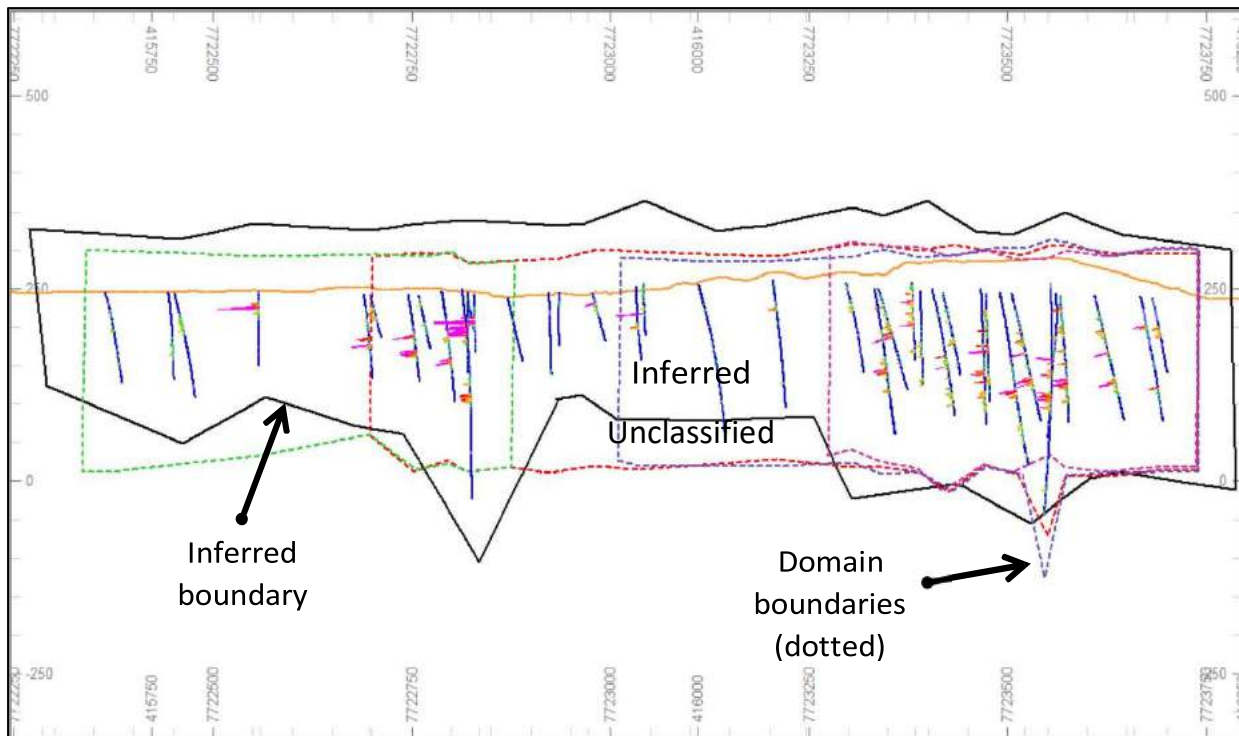


Figure 6-10 Long section view of classification boundaries with drill holes

### 6.2.5.8 Mineral Resource Report

High-level economic analyses applying both open cut and underground mining parameters have indicated that it is appropriate to report the Millennium Mineral Resource using two cut-off grades as is more relevant to the longer-term expectations of eventual economic extraction.

Copper equivalent (CuEq) grades were calculated using estimated block grades for Cu, Co, Au and Ag. The CuEq calculation is based solely on commodity prices without assumptions about recovery or payability of the different metals. Prices used by Hammer were a reflection of the market as at October 1<sup>st</sup>, 2016 and forward-looking forecasts provided by consensus analysis. Metal prices used were: Cu: US\$4,600/t; Co: US\$27,000/t; Au: US\$1,330/oz; and Ag: US\$20/oz.

The copper equivalent equation is:

$$CuEq = Cu \% + (Co\% \times 5.9) + (Au \text{ ppm} \times 0.9) + (Ag \text{ ppm} \times 0.01)$$

The Millennium Mineral Resource is reported at 0.70% CuEq and 1.0% CuEq cut-offs in Table 6-17 where rounding has been applied to reflect the level of confidence in Inferred Mineral Resources. The grade tonnage information at various CuEq cut-offs is presented in Appendix C.



**Table 6-17 Millennium November 2016 Mineral Resource - Inferred**

Cu Eq Cut-off	Tonnes	CuEq (%)	Cu (%)	Co (%)	Au (ppm)
1.00%	3,070,000	1.29	0.35	0.14	0.12
0.70%	5,890,000	1.08	0.32	0.11	0.11

It should be noted that there has been no test for eventual economic extraction which would be required to be 43-101 compliant.

The QP's note that this resource is a historical resource and must be treated as such. This resource is not currently NI43-101 compliant. GEMC is not treating this resource as current and will be required to initiate a work program in order to upgrade this resource to a current NI43-101 compliant resource, following CIM guidelines.

## 7 Geological Setting and Mineralisation

### 7.1 Regional Geology

The Mt. Isa Inlier is a multiple deformed and metamorphosed Early to Middle Proterozoic terrain. The inlier has been subdivided into three broad north-trending Provinces: the Western, the Kalkadoon and the Eastern Fold Belts based on various tectonic, structural and palaeogeographic criteria (Figure 7-1). The Eastern Fold Belt is subdivided into a further three zones, from west to east; the moderately deformed Wonga and Quamby-Maldon Subprovinces and the structurally complex Cloncurry Subprovince (Blake 1987).

The Western Fold Belt contains the sediment hosted, stratiform world class Mt. Isa, Hilton, George Fisher lead, zinc, silver deposits and the Mt. Isa copper deposits. The eastern Fold Belt, in particular the Cloncurry Sub-province contains deposits of different character including several significant iron oxide copper gold deposits (Ernest Henry, Osborne, Mt Elliot, and the Starra deposits) and lead, zinc, silver deposits including the world class Cannington. Dugald River is the only known sediment hosted, lead, zinc, silver deposit in the Eastern Fold Belt.

The Millennium Project is situated in the Quamby-Malbon Sub-province of the Eastern Succession of the Mt. Isa Inlier and lies within the predominantly metasedimentary Corella Formation of the Mary Kathleen Group (Figure 7-1).

The metasedimentary rocks locally comprise Milo Beds of the Tommy Creek Domain containing Palaeoproterozoic Cover Sequence 3 sediments and felsic and mafic igneous rocks with geochronological ages ranging from 1660 to 1610 Ma. The domain is underlain by Cover Sequence 2 Corella Formation belonging to the Mary Kathleen Domain (west) and Canobie Domain (east).

The western margin is bordered by the Fountain Range/Quamby Fault system, a regionally extensive NNE-trending, dextral strike slip fault system that demarcates the Tommy Creek Domain from the Mary Kathleen Domain. A block of Quamby Conglomerate is situated immediately west of the Milo Beds, bound between the Quamby Fault to the east and the Fountain Range Fault to the west.

In the vicinity of the Millennium Project area, the Fountain Range Fault has merged with the Pilgrim Fault, a regionally extensive NNE- trending, reverse to dextral strike slip fault system that hosts numerous mineral occurrences including the Kalman Cu, Au, Mo, Re deposit and the Tick Hill Au occurrences. The Pilgrim Fault is interpreted as an east dipping fault with a surface expression of multiple stacked east stepping, steeply west dipping shears.

The structural setting of the Millennium Project, characterised by crustal scale structures tapping mantle derived fluids and reacting with reactive metasediments provide the essential elements for discovering large tonnage deposits.

The regional geology and structural setting showing the Millennium tenements is presented in Figure 7-2.

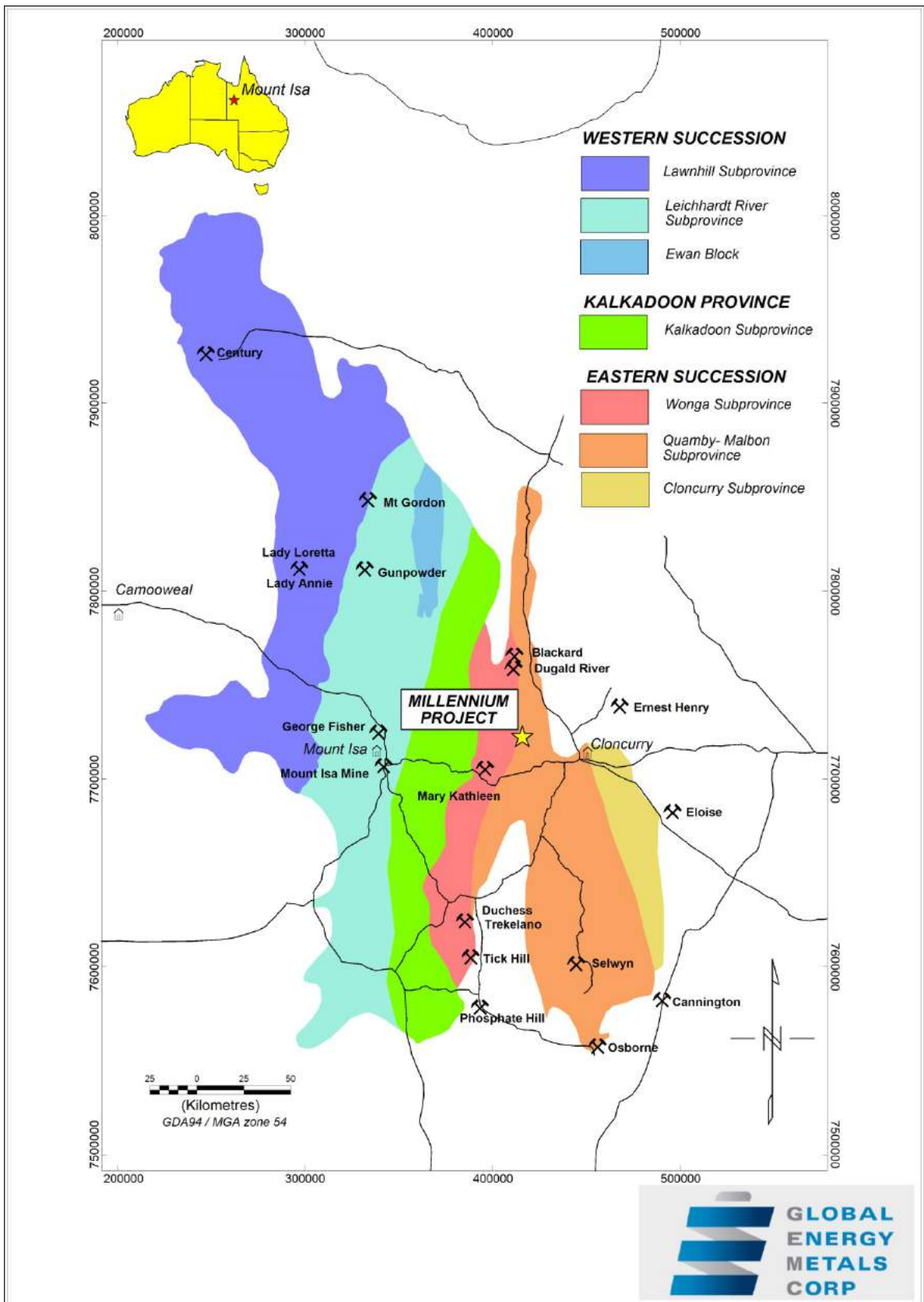


Figure 7-1 Regional Geological Setting within the Mt. Isa Inlier

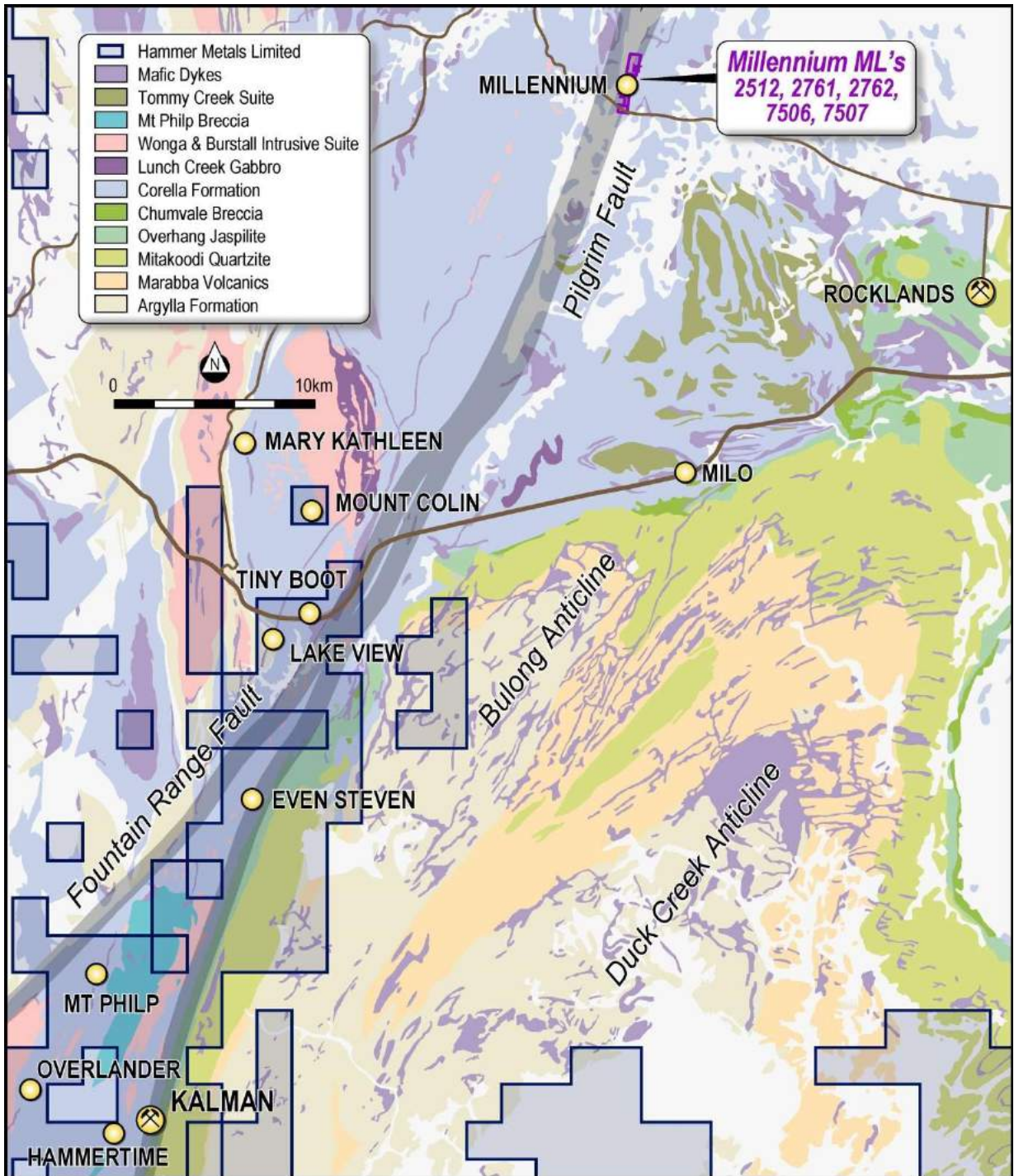


Figure 7-2 Regional Structural Setting of the Millennium Project

## 7.2 Property Geology

The Millennium Project geology comprises a sequence of tremolitic marble and calc-silicate rocks, mica schist, graphitic schist, quartzite, porphyritic mafic to intermediate lava and volcanoclastic rocks, meta-rhyolite and felsic volcanoclastic rocks of the Milo Beds. The Milo Beds are Palaeoproterozoic in age ranging between 1660 Ma and 1610 Ma.

The NNE-trending Quamby Fault separates the Milo Beds on the east from a fault-bound block of Quamby Conglomerate to the west. Subsidiary splays extend into the Milo Beds and frequently host massive to brecciated quartz veins. The Quamby Conglomerate forms a topographic high on the western side of the leases which has shed conglomeratic colluvium widely across the project area, covering large portions of the underlying geology and potential mineral occurrences.

The simplified geology at the Millennium Project is displayed in Figure 7-3. Typical cross sections through the deposit are presented in Section 10 of this report.

There are two major lithologies hosting the Cu-Co-Au mineralisation: graphitic schist and ferruginous quartzite with both lithologies micro-fractured, altered and quartz-carbonate-sulphide veined (Plate 7-1 & 7-2). The graphitic schist is a fine grained feldspathic, quartz, tourmaline, graphite rich metapelite / metasiltstone containing abundant rutile (Teale 2017). The sandy quartzitic horizons often contain domains of albite, siderite and chlorite alteration. An anastomosing network of veins, microveins, breccias and fractures, many containing pyrite and chalcopyrite are often developed in the brittle fractured quartzite intervals. Conglomerate has been mapped in eastern parts of ML7507 adjacent to the main body of quartzite and in narrower zones within intercalated fine grained metasediments and narrow calc-silicate horizons. Mineralisation extends into the conglomerate in the footwall to the quartzite.

The main ferruginous quartzite forming the 660-metre-long elevated ridge in ML7507 is interpreted to be a significant controlling factor in the location of the Millennium mineralisation. The quartzite is interpreted to have been offset by faulting with calc-silicate rocks outcropping to the north of the elevated ridge (Plate 7-3).

Quartzite similar to that hosting mineralisation associated with the ridge has also been mapped in central and northern parts of ML7506 and may represent the along strike continuation of the same critical lithological sequence.

Amphibolitic rocks have been mapped within the metasediments on ML2761 and parallel the main regional Pilgrim Fault. Mica schist outcrops in the eastern part of ML2761 and in southern parts of ML2762 in the vicinity of the Federal Mine workings (Plate 7-4). Gossanous float material has been mapped along the Federal Mine trend within mica schist

The main structures mapped on the property are north-west and north-east trending faults. There is no apparent surface expression of the main Pilgrim Fault on the ML's. The Pilgrim Faults extends for over 100km from north to south and separates the Wonga and Quamby-Malbon Sub-provinces (Figure 7-2).

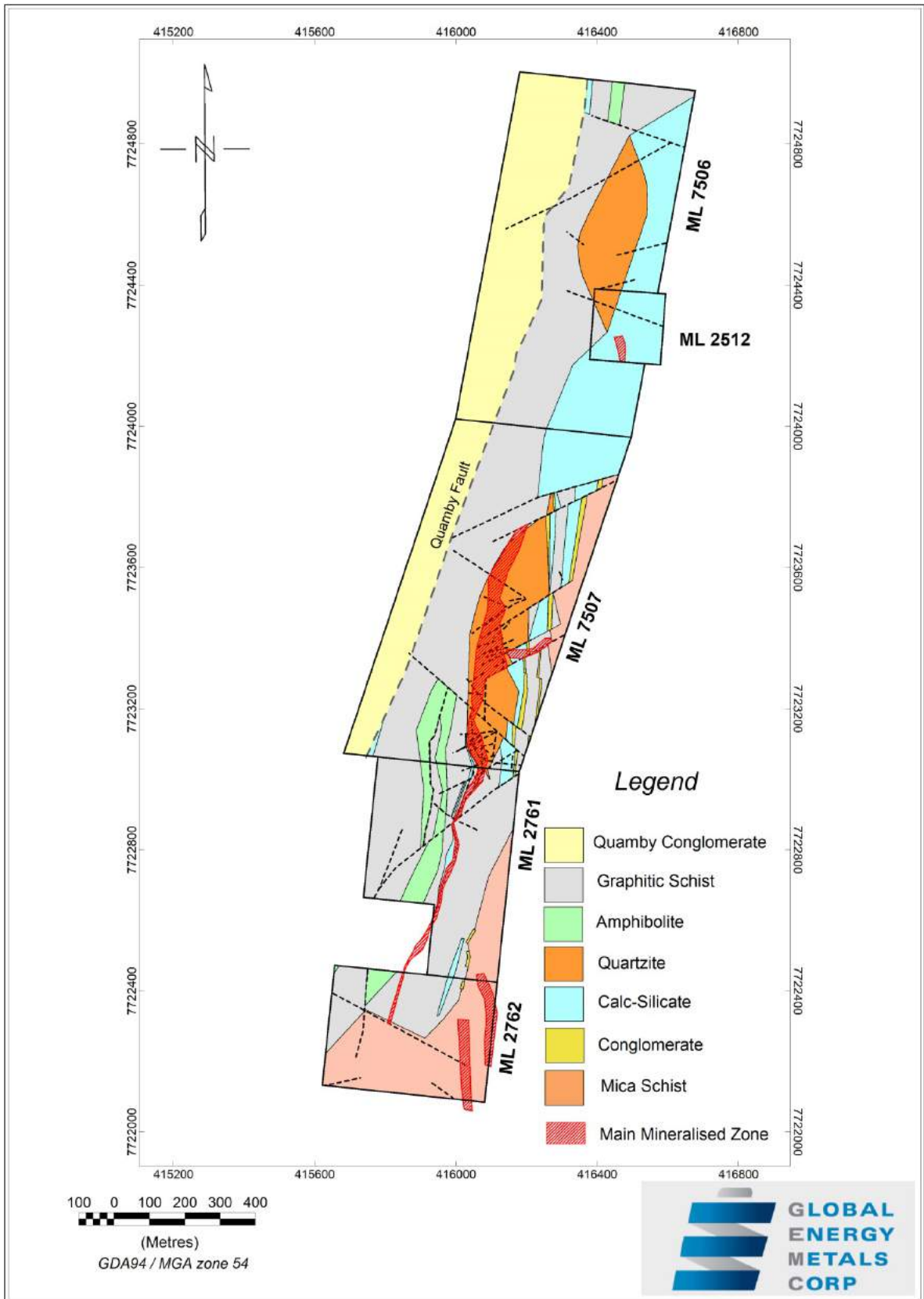


Figure 7-3 Local Geology of the Millennium Project





*MIDD001 40.4m graphitic metasediment*



*MIDD007 60m quartzite with disseminated pyrite and chlorite alteration*



*MIDD001 106m contact between conglomerate and laminated sandy sediments*



*MIDD004 100.5m conglomerate*

**Plate 7-1 Typical graphitic schist, quartzite & conglomerate in drill holes**



**Plate 7-2 Contact between graphitic schist and sandy sediments in outcrop**



**Plate 7-3 Outcropping Calc-Silicate Rocks in northern parts of ML7507**



**Plate 7-4 Steep westerly dipping outcropping mica schist**

### **7.2.1 Mineralisation**

The mineralisation at the Millennium Project is hosted by the Tommy Creek Beds of the Corella Formation on a structure interpreted to be associated with the regional Pilgrim Fault. Mineralisation is predominantly hosted within graphitic metasediments, siltstones and ferruginous quartzite as discussed in Section 7.2. The mineralisation dips steeply to the west parallel to the main stratigraphy.

The mineralisation is hosted by north north-east trending shears that exploit competency contrasts between lithological units and pre-existing alteration zones. The width and tenor of the mineralisation appears to be strongly influenced by the host's propensity for brittle deformation. Numerous north-east and north-west trending faults cross cut and locally offset the host stratigraphy.

The main deposit has been divided into a Northern and Southern Zone. The Northern Zone extends along an approximate 250 metre strike zone and is hosted by a 200m wide sequence of quartzites and calc-silicates within the graphitic/micaceous schists. The western margin of the quartzites comprises a zone up to 90m wide of thinly interbedded schist and quartzite. Numerous lithological contacts and cross faults create widespread brittle and ductile deformation within this zone, permitting pervasive ferruginous, chlorite and feldspar alteration; with localised silicification

along lithological contacts and shears. Mineralisation occupies moderately to steeply dipping NNE-striking tabular shear zones within the alteration halo.

The Southern Zone comprises a narrow 750 metre striking NNE-trending shear zone that has a tendency to follow narrow calc-silicate to quartzite intervals within a broad package of graphitic and micaceous schist.

The sulphide mineralisation occurs as disseminated pyrite, chalcopyrite, and bornite with cobaltiferous pyrite and cobaltite. Sulphide mineralisation is also contained in sulphide-rich veins, quartz veins and breccias. Several generations of veining are evident with veins consisting of pyrite and pyrite and chalcopyrite. Core samples are cut by numerous vein types with early sinuous and late planar quartz veins cut by late quartz-feldspar-apatite-rutile-chalcopyrite veins.

Chalcopyrite is commonly present in several generations of quartz, carbonate, chlorite and potassium feldspar veins and micro-fractures. Chalcopyrite tends to develop along the margins of the quartz veins and commonly in the coarse-grained feldspathic domains and in veins. It also occurs as micro-veins cutting quartz veins, as inclusions in quartz veins and as inclusions in pyrite. Arsenopyrite is present in minor concentrations and siderite present in veins (Teale 2017).

Oxidation reaches to depths of 25m below surface. Malachite is commonly observed in the supergene zone. Supergene bornite, chalcocite and covellite, and chalcopyrite with hypogene bornite and rimmed by covellite, tetrahedrite and galena has been identified in mineralogical investigations.

Typical examples of disseminated and sulphide vein mineralisation in drill core are displayed in Plate 7-5.



*MIDD010 50.8m chalcopyrite pyrite vein in quartzite 0.14% Co, 0.52% Cu, 1.24 g/t Au*



*MIDD009 41.2m malachite bearing quartzite 0.08% Co, 0.74% Cu, 0.25 g/t Au*



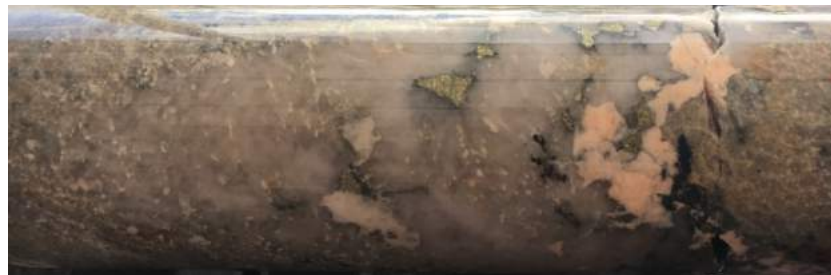
*MIDD009 70.5m chalcopyrite pyrite vein in quartzite 0.42% Co, 0.83% Cu, 0.25 g/t Au*



*MIDD005 53.5m quartz coarse pyrite vein in quartzite 0.05% Co, 0.69% Cu, 0.38 g/t Au*



*MIDD004 116.9m calcite pyrite breccia vein in conglomerate 0.005% Co, 0.20% Cu, 0.08 g/t Au*



*MIDD001 72.7m quartzite 0.05% Co, 0.62% Cu, 0.20 g/t Au*



*MIDD003 91.7m coarse pyrite in conglomeratic unit, 0.07% Co, 0.32% Cu, 0.09 g/t Au*



*MIDD004 31.8m coarse sulphides in graphitic shale, 0.05% Co, 0.12% Cu, 0.01 g/t Au*



*MIDD005 66.1m disseminated chalcopyrite and minor pyrrhotite 0.08% Co, 0.63% Cu, 0.12 g/t Au*



*MIDD010 41m cobaltite chlorite mineralisation in quartzite 1.85% Co, 0.18% Cu, 0.42 g/t Au*



*MIDD008 54.1m chalcopyrite breccia vein in quartzite 0.02% Co, 0.61% Cu, 0.07 g/t Au*



*MIDD006 82.8m dissem. pyrite and chalcopyrite in conglomerate 0.13% Co, 0.20% Cu, 0.06 g/t Au*



*MIDD001 54.9m quartzite 0.03% Co, 0.19% Cu, 0.75 g/t Au*

**Plate 7-5 Typical Disseminated and Vein Sulphide Mineralisation in Diamond Core**

## 8 Deposit Types

The Mt. Isa Inlier is a highly mineralised, established mining jurisdiction and is host to many world class ore bodies, including Mt. Isa, Hilton, George Fisher, Cannington and Ernest Henry.

The mineral deposits of the Mt. Isa Inlier have been categorised into eight major deposit types by Blake (1987). The eight categories are based on the style of mineralisation rather than genetic models of the mineralisation.

**Type 1** are breccia hosted deposits in metasediments (e.g. Mt. Isa, Mammoth); **Type 2** are shear zone and fracture-controlled vein deposits. Type 2 have been subdivided into four types (a) copper-gold-silver (e.g. Mount Elliot, Hampden, Duchess, Great Australia) (b) gold (e.g. Gilded Rose) (c) lead-zinc-silver (e.g. Silver King); (d) miscellaneous (e.g. Silver- Silver Phantom, Cobalt- Mt Cobalt, Tungsten McLennans Claim. The majority of these deposits are relatively small and occur as single or multiple vein lodes within shear zones and faults; **Type 3** are sediment hosted stratiform lead zinc deposits that occur in intra-cratonic fault bounded basins with the bounding faults providing channels for mineralising fluids. Thinly bedded, weakly metamorphosed dolomitic clastic sediments are typical hosts and evaporitic environments are commonly evident; **Type 4** are ironstone-hosted stratiform deposits occurring largely within metamorphosed and deformed banded iron formation of the Cloncurry-Selwyn Zone; **Type 5** are skarn hosted deposits (e.g. Mary Kathleen- U; Maramungee Pb/Zn); **Type 6** are stratabound, fault related deposits (e.g. Counter, Redtree); **Type 7** are granite and pegmatite hosted deposits (e.g. Crystal Hill, Big Beryl); **Type 8** Placer deposits (e.g. Top Camp).

The Millennium Project deposit falls within the Type 2 miscellaneous category which is shear/fault-controlled vein deposits. The Millennium deposit is unusual given the cobalt signature with the copper and gold mineralisation.

The distribution of copper mineralisation in the Mt. Isa inlier shows several significant trends. In the Kalkadoon-Leichard belt, Mary Kathleen Zone and Quamby-Malbon Zone, copper mineralisation is dominated by numerous small shear zones and fracture-controlled vein deposits with the controls on the mineralisation being largely structural. Many deposits occur near major structures, but most are in sub-ordinate shear zones situated away from the main faults. Most of the gold production from the Mt. Isa Inlier has been produced as a by-product from shear and fault-controlled vein copper deposits, particularly in the Eastern Fold Belt.



## 9 Exploration

The exploration work performed on the Millennium Project prior to its acquisition by GEMC is considered historical and is summarised in detail in Section 6 of this report.

### 9.1 Current Exploration

#### 9.1.1 Rock Chip Sampling

There have been various phases of rock chip sampling at Millennium during the period 2010 to 2013 and more recently during the period 2016-2018.

The GEMC/Hammer joint venture announced the results of 72 samples to the TSX on June 4, 2018. The rock chip sampling was completed to test for additional zones along the Millennium trend. The samples, typically 3-5 Kg in weight were submitted for 4 acid digest followed by AAS assay for Au and ICP (OES) analysis for a multi-element suite including copper, silver, cobalt and molybdenum. No standard reference material samples were submitted with the rock chip samples. The analytical method is appropriate for rock chip sampling.

The metal concentrations in the selectively collected rock chip samples ranged between Co: 0.0001-0.12%; Au: <0.01-0.21 g/t; Ag: <0.20-42.6 g/t; Cu: 0.0011-45.3%; Pb <0.0002-0.16%; and Zn 0.003-0.25%.

The results of rock chip sampling in the northernmost part of the Project ('Northern Extension') approximately 1km north of the historical Millennium Resource area are promising. There are similar host rocks in this area with associated strong soil geochemical anomalies.

The assay results for Cu from all 201 rock chip samples in the company database including historical samples are shown in Figure 9-1.

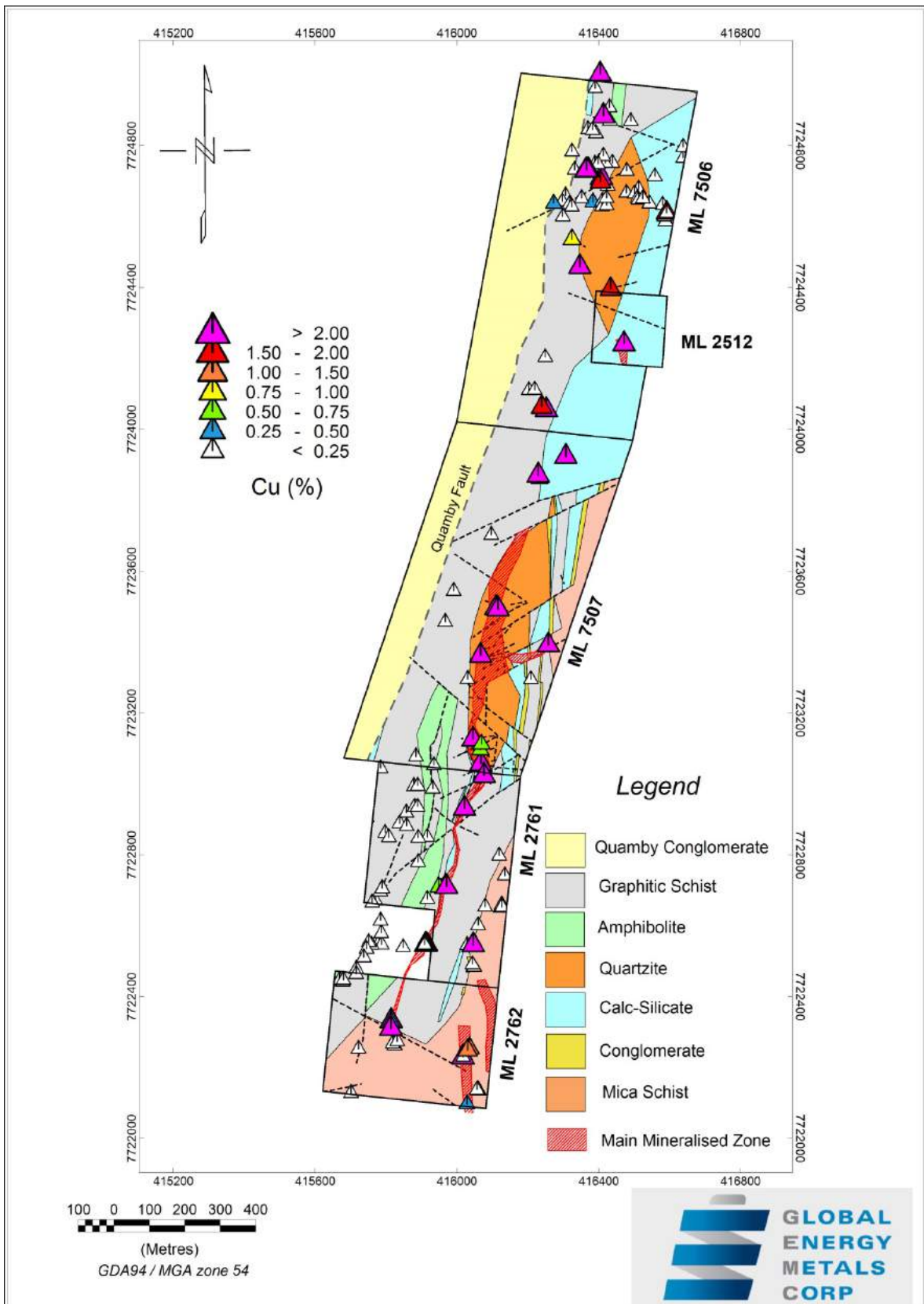


Figure 9-1 Rock Chip Sampling Assays (Cu%) Millennium Project

## **9.2 Mapping**

No significant mapping has been completed in recent programs.

## 10 Drilling

### 10.1 Overview

The details of all drilling completed at the Millennium Project are detailed in Table 10-1.

Details of the validation of historical drill holes undertaken by Haren (2016) as part of the historical JORC mineral resource statement are described in Section 6. Only drill holes drilled in 2013 by CYU and by Hammer were used in the historical ore resource statement in 2016.

Table 10-1 includes all holes in the database, although some Q series drill holes were completed outside of the current ML's. Drill holes drilled since 2013 are suitable for use in future mineral resource estimates.

**Table 10-1 Drilling Summary Table**

Year	Operating Company	No of Holes		Metres Drilled	
		DD Holes	RC Holes	DD Holes	RC Holes
1964	Carpentaria Exploration	11		279.32	
1970	Tasman Minerals	4		673.60	
1992	Diversified Minerals	6		575.60	
2013	Chinalco Yunnan Copper		17		2,815.00
2016	Hammer Metals Ltd		23		3,425.00
2018	GEMC/Hammer Metals JV	10	4	1,064.00	548.00
	<b>Totals</b>	<b>31</b>	<b>44</b>	<b>2,592.52</b>	<b>6,788.00</b>

### 10.2 Drilling Methods

#### 10.2.1 Diamond Drilling

Hammer on behalf of GEMC contracted Drill North Pty Ltd utilising a small footprint diamond drill-rig capable of drilling HQ and NQ core (Plate 10-1). The objective of the 10 hole 1,064m drilling campaign was to test the up-dip continuity at the Millennium North deposit and confirm historical estimates of Co mineralisation reported in 2016 by JV partner Hammer. The drill holes are located on six sections at 50m spacing in the northern part of the deposit (Figure10-1). Holes are oriented as close to perpendicular as possible to the interpreted orientation of mineralisation. The drill holes were drilled with dip ranging between -20° and -40° as detailed in Table 10-2 & Plate 10-2.

**Table 10-2 Diamond Drill Hole Specifications**

BHID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
MIDD001	416048	7723501	244.35	-45	90.00	121.10	2018
MIDD002	416050	7723497	245.06	-45	90.00	33.50	2018
MIDD003	416053	7723500	245.43	-25	90.00	102.40	2018
MIDD004	416057	7723538	242.68	-40	90.00	132.20	2018
MIDD005	416064	7723538	245.15	-20	90.00	110.00	2018
MIDD006	416082	7723590	241.54	-45	90.00	155.00	2018
MIDD007	416088	7723590	244.09	-25	90.00	119.60	2018
MIDD008	416030	7723405	252.17	-20	90.00	93.50	2018
MIDD009	416005	7723360	249.34	-25	85.00	96.70	2018
MIDD010	416047	7723450	249.12	-20	90.00	100.00	2018

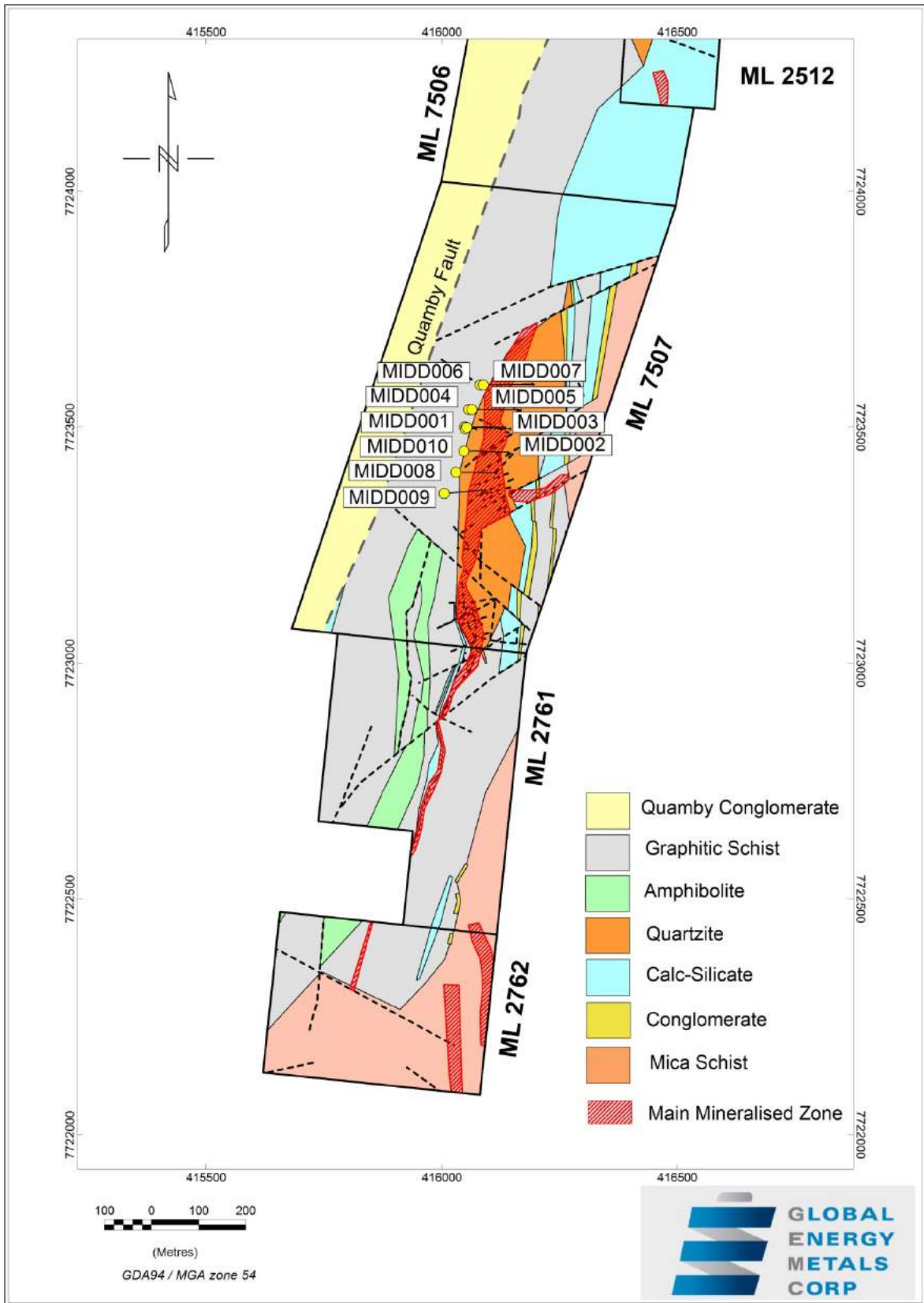


Figure 10-1 Collar Locations of Diamond Drill Holes (MIDD001-MIDD010)

## 10.2.2 Reverse Circulation Drilling

Drill holes MIRC024-MIRC026 were drilled by Mitchells Services utilising a UDR650 (Sandvick DE840) truck mounted rig (Table 10-3 & Plate 10-3). Reverse circulation drilling using nominal 5.5” diameter holes with a face sampling hammer was used. Drill hole MIRC024 was drilled in the northern part of the deposit, whereas MIRC025 and MIRC026 were drilled in the southern part of the deposit. The location of these drill holes is displayed in Figure 10-2.

\* MIWB01 is a reverse circulation water bore that was drilled purely for the discovery of water.

**Table 10-3 Reverse Circulation Drill Hole Specifications**

BHID	Easting	Northing	Elevation	Dip	Azimuth	Depth	Year
MIRC024	415998	7723384	247.25	-55	90.00	157.00	2017
MIRC025	415875	7722822	248.66	-58	100.00	157.00	2017
MIRC026	415843	7722674	250.35	-63	86.50	157.00	2017
MIWB01	415950	7722730	239.22	-90	0.00	77.00	2018

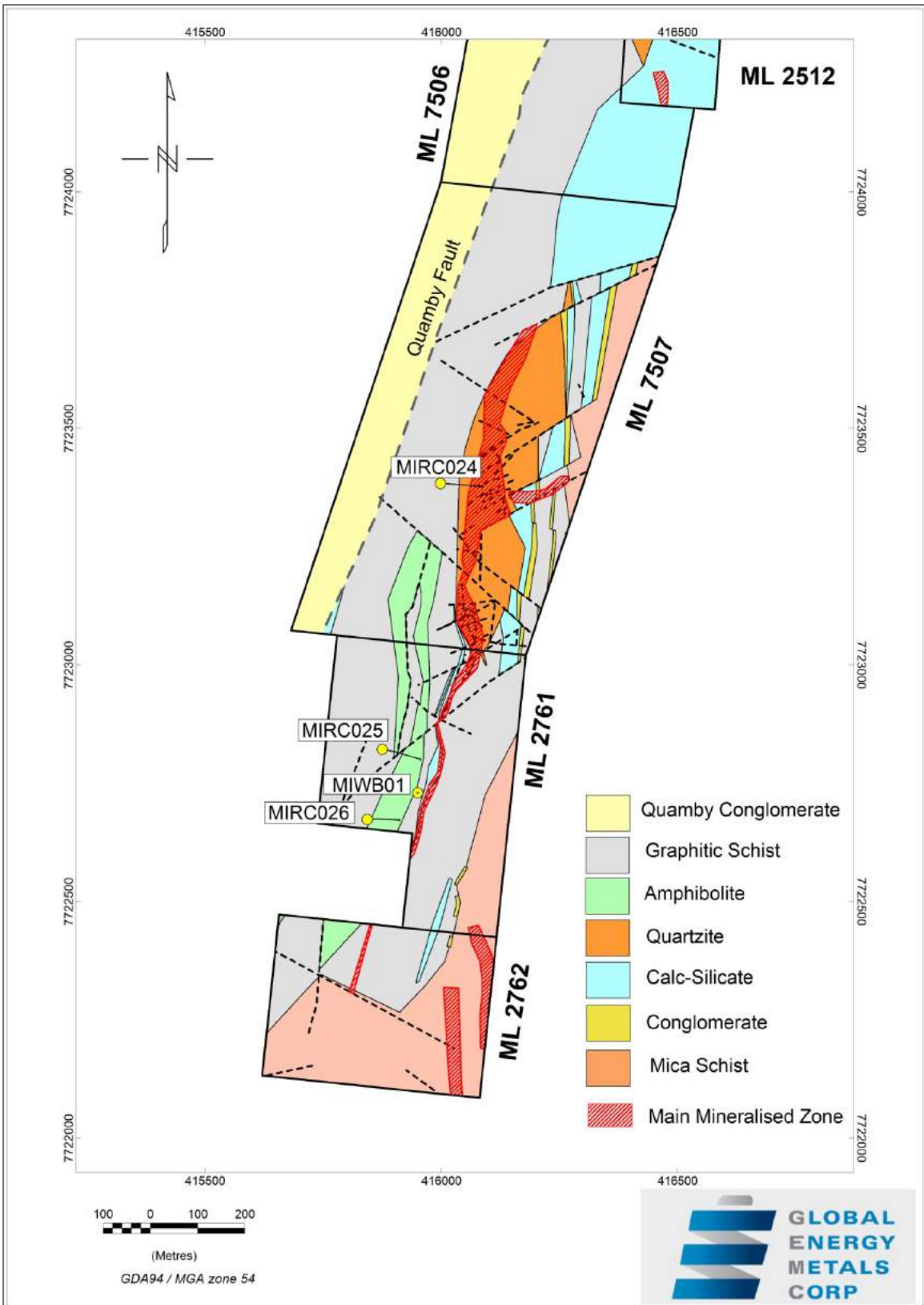


Figure 10-2 Collar Locations of RC Drill Holes (MIRC024-MIRC026 & MIWB01)



### 10.3 Collar Surveys

Drill hole collar locations are surveyed by ground-based LIDAR using a Leica Viva instrument. Horizontal precision was 0.01m, with an altitude precision of 0.026m. Datum used is UTM MGA/GDA 94 Zone 54.



**Plate 10-1 Diamond Drill Rig (drill hole MIDD009)**

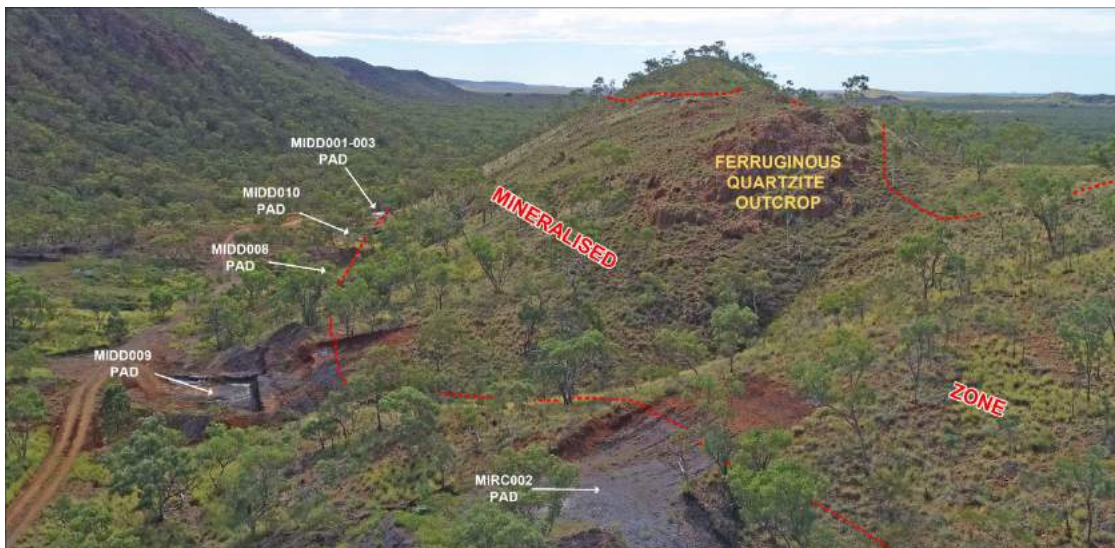


Plate 10-2 Diamond Drill Collar Positions Relative to the main outcrop of Quartzite



Plate 10-3 Reverse Circulation Drill Rig (drill hole MIRC026)

## 10.4 Downhole Surveys

Holes drilled by Hammer were surveyed by Reflex Ezi-trac multi-shot downhole camera at 15m to 30m intervals. Surveys were downloaded from the instrument and imported into a central database. Results were plotted and visually scanned for consistency. Survey records containing very high magnetic intensity or anomalous azimuth deviations were removed from the dataset.

## 10.5 Drill Core Mark Up

All core trays are marked with a drill hole identifier and tray number. The drill core is assembled on angle iron to facilitate correct alignment of core orientation marks and recovery and RQD measurements. Depth downhole is marked at 1m intervals and cross referenced with the driller's end of run blocks. A reflex ACT II tool is used to mark the bottom of the hole. The driller marks the core when a successful orientation mark has been made.

The bottom of hole orientation line is marked on the core as a one-sided arrow indicating the downhole direction. Additional arrows are placed on the line determined by the number of consecutive drill runs with orientation marks falling within an 8mm tolerance in the offset of consecutive orientation marks. Alpha and beta measurements are made on veins, bedding and foliation. The measurements are later translated to their true dip and direction orientation. A cutting line is marked, slightly offset from the orientation line, to facilitate consistency of core sampling down the drill hole.

## 10.6 Logging

### 10.6.1 Diamond Drill Core

The core preparation was completed at Hammer's exploration facility in Cloncurry. The core is jugged, metre marked, photographed both wet and dry and logged for recoveries, RQD, and continuity of orientation lines.

Geological and logging is completed by geologists prior to the core being half-cut and sampling for assay. Geological logs record lithology, alteration assemblages and economic minerals are identified and described.

Every drilled metre was qualitatively logged using an Olympus Vanta portable XRF instrument and KT-10 magnetic susceptibility meter. Two duplicate samples were taken from each drill hole and inserted at the end of the drill hole sample sequence. Assays were taken on 1 and 4m sample lengths.

Samples consist of half NQ and half HQ core. Sample collection methodology and core diameter is considered appropriate to the target-style, and appropriate laboratory analytical methods were employed.

All field logging is validated and entered into the company database. Assay files were received electronically from the laboratory. Intersections which contain an analysis below the detection limit are calculated using an adjusted value which is half the listed detection.

### 10.6.2 Reverse Circulation Chips

All drill chips were geologically logged in detail by Hammer geologists recording lithology, alteration and mineralisation, weathering, colour, structure, and any other features of the sample to a level of detail to support appropriate studies. Each metre interval was qualitatively logged using an Olympus Vanta portable XRF instrument and KT-10 magnetic susceptibility meter. RC field duplicates were collected by splitting 1 metre sample returns on-site.

Standard reference samples and blanks were each inserted into the laboratory submissions at 25 sample intervals.

The 1 metre 3kg riffle split samples, 3kg four metre composites and the sample preparation procedures used by ALS are appropriate for the material being sampled. In the situation where visual inspection and portable XRF suggested an interval was not mineralised then a four metre composite was created using a riffle splitter.

The recovery of RC drilling was based on visual estimation only. Individual 1m samples were not weighed to determine recovery rates theoretically. The moisture content of individual samples is also recorded. The majority of samples were dry.

### 10.7 Core Recovery

Overall, recovery is very good. The average core recovery for the MIDD001-MIDD010 program was 92%. Zones of core loss were encountered on the western contact between graphitic metasediment and quartzite. Drillers were able to adapt their drilling through changing mud mix and bit styles to maximise recovery and with successive holes the recovery increased. There was core loss in the upper portions of some of the initial drill holes where friable weathered material was lost. For the purposes of average mineralised grade calculations, the zones of core loss were assigned zero grade.

### 10.8 Bulk Density

Sixty RC drill samples were submitted to ALS for specific gravity determination by method OA-GRA08b (Specific Gravity on pulps using pycnometer).

Drill core specific gravity determinations are made at 5m intervals down hole. GEMC/Hammer has a standard operating procedure in place for the measurement of bulk density. A representative sample of approximately 20cm length is chosen at 5 metre intervals. Bulk density is calculated using the immersion method on a set of digital scales which are set up over a large bucket. The weights are recorded to the nearest 1 gram. The equation used to calculate the bulk density is:

$$\text{Bulk density} = \frac{\text{weight in air (g)}}{\text{weight in air (g)} - \text{weight in water (g)}}$$





Plate 10-5 Photograph of mineralised intersection in MIDD005 with Au g/t / Co % / Cu % assays

## 10.10 Significant Diamond Drill Intersections

The significant intersections from diamond drilling are summarized in Table 10-4. The data aggregation methods used in the reporting of mineralised intersection in Table 10-4 are reported primarily on their copper equivalent grades.

The significant grade intervals are based on a 0.2% Cu cut-off to illustrate the mineralised envelope. The cobalt equivalent calculation utilises the following metal prices Au/oz. US\$1250 Ag/oz.US\$17, Co/T US\$75,000 and Cu/T US\$7,100. The metallurgical studies completed to date indicate there is reasonable expectation that these metals can be recovered.

The relationship between sample interval and the true thickness is dependent on the inclination of the drill hole given the interpreted steep westerly dip to mineralised zones. The true thickness varies between 80-100% of the intervals reported. The assay results for MIDD001-MID003 were reported to the TSX on April 30, 2018; Drill holes MIDD004-MIDD006 on May 31, 2018 and drill holes MIDD007-010 on June 19, 2018.

**Table 10-4 Significant Mineralised Intersections Diamond Drilling**

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Co Eqv (%)	Co (%)	Cu (%)	Au (g/t)	Ag (g/t)
MIDD001	121.1		31	115	84	0.06	0.04	0.15	0.07	0.25
		incl.	39	47	8	0.14	0.12	0.19	0.07	0.25
		&	39	42	3	0.22	0.21	0.10	0.05	0.25
		&	54	58	4	0.11	0.03	0.48	0.53	0.25
		&	55	56	1	0.16	0.02	0.95	0.87	0.25
		&	70	76	6	0.18	0.11	0.65	0.17	0.25
		&	100	101	1	0.22	0.18	0.29	0.15	0.25
MIDD002	33.5		23	27	4	0.11	0.10	0.13	0.01	4.25
		incl.	25	26	1	0.34	0.32	0.21	0.01	1.20
MIDD003	102.4		9	57	48	0.07	0.05	0.17	0.06	0.33
		incl.	14	21	7	0.19	0.14	0.36	0.12	0.49
		&	18	19	1	0.06	0.03	0.19	0.24	1.90
		&	19	21	2	0.39	0.33	0.57	0.11	0.25
		&	34	35	1	0.11	0.10	0.05	0.02	0.25
		&	36	43	7	0.05	0.03	0.20	0.10	0.25
		&	48	53	5	0.38	0.04	0.30	0.14	0.68
			84	94	10	0.04	0.03	0.11	0.03	0.25
		incl.	88	89	1	0.07	0.04	0.30	0.10	0.25
&	91	92	1	0.11	0.07	0.32	0.09	0.25		
MIDD004	132.2		12	23	11	0.05	0.03	0.08	0.04	3.30
		incl.	16.6	18	1.4	0.08	0.04	0.21	0.23	7.29
		&	20.6	22	1.4	0.15	0.12	0.17	0.06	17.86
			31	32	1	0.07	0.06	0.13	0.01	0.25
			38	39	1	0.03	0.01	0.23	0.01	0.80
			40	41	1	0.03	0.01	0.23	0.01	0.25
			44	45	1	0.04	0.00	0.33	0.01	0.25
			47	75	28	0.05	0.03	0.11	0.06	1.15
		incl.	63	69	6	0.11	0.07	0.32	0.17	3.58
		&	63	63.6	0.6	0.14	0.08	0.10	0.60	29.20
		&	65	66	1	0.16	0.13	0.30	0.12	0.80
			72	75	3	0.04	0.03	0.08	0.06	0.40
			89	112	23	0.05	0.03	0.15	0.06	0.45
		incl.	89	91	2	0.17	0.13	0.38	0.17	0.75
	116	117	1	0.03	0.01	0.20	0.08	0.25		

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Co Eqv (%)	Co (%)	Cu (%)	Au (g/t)	Ag (g/t)
MIDD005	110		7	10.4	3.4	0.22	0.19	0.33	0.05	0.48
		incl.	7	8	1	0.46	0.42	0.39	0.06	0.25
			13.9	15	1.1	0.02	0.01	0.12	0.00	0.20
			17.2	18	0.8	0.02	0.01	0.15	0.01	0.25
			23.1	25	1.9	0.03	0.01	0.16	0.01	0.25
			30.5	31.2	0.7	0.04	0.02	0.18	0.14	0.25
			34	67	33	0.07	0.05	0.21	0.12	0.24
		incl.	35	37	2	0.11	0.08	0.20	0.20	0.25
		&	42	43	1	0.09	0.04	0.28	0.48	0.25
		&	52	59.4	7.4	0.13	0.08	0.45	0.16	0.24
		&	57	60	3	0.20	0.15	0.48	0.13	0.23
		&	64	67	3	0.09	0.04	0.40	0.27	0.25
			81	94	13	0.11	0.08	0.27	0.08	0.52
		incl.	81	82	1	0.31	0.27	0.35	0.15	0.25
&	93	94	1	0.33	0.30	0.30	0.04	0.25		
MIDD006	155		4.5	5.6	1.1	0.73	0.62	1.10	0.05	0.70
			8	8.8	0.8	0.04	0.02	0.09	0.21	0.25
			14	15	1	0.05	0.02	0.33	0.01	0.25
			42	122	80	0.05	0.04	0.07	0.02	0.30
		incl.	56	57	1	0.12	0.12	0.01	0.01	0.25
		&	62	73	11	0.24	0.22	0.13	0.07	0.25
		&	62	64	2	0.68	0.64	0.29	0.14	0.25
		&	69	73	4	0.25	0.23	0.18	0.08	0.25
&	82	86	4	0.16	0.15	0.09	0.03	0.25		
&	108	115	7	0.04	0.02	0.20	0.05	0.91		
MIDD007	119.6		8	9	1	0.02	0.00	0.07	0.11	0.25
			31	32	1	0.03	0.01	0.22	0.01	0.25
			37	46	9	0.08	0.03	0.18	0.48	0.25
		incl.	40	41	1	0.17	0.02	0.06	2.78	0.25
		&	43	46	3	0.12	0.07	0.47	0.11	0.25
		&	44	45	1	0.19	0.11	0.77	0.12	0.25
			50	52	2	0.12	0.11	0.16	0.05	0.25
		incl.	50	51	1	0.14	0.11	0.29	0.08	0.25



BHID	Depth (m)		From (m)	To (m)	Int. (m)	Co Eqv (%)	Co (%)	Cu (%)	Au (g/t)	Ag (g/t)
MIDD008	93.5		4	6	2	0.05	0.01	0.31	0.25	0.25
			20	63	43	0.09	0.05	0.31	0.11	0.51
		incl.	21	22	1	0.14	0.11	0.33	0.02	0.25
		&	27	35	8	0.08	0.04	0.35	0.13	0.39
		&	27	28	1	0.17	0.10	0.66	0.23	0.25
		&	40	49	9	0.09	0.06	0.30	0.13	0.28
		&	40	41	1	0.24	0.18	0.61	0.20	0.25
		&	53	62	9	0.11	0.05	0.54	0.21	1.17
		&	55	56	1	0.19	0.06	0.83	0.88	0.80
		&	58	59	1	0.22	0.09	1.17	0.24	2.30
		&	61	62	1	0.13	0.10	0.25	0.10	0.80
MIDD009	96.7		3	4	1	0.02	0.00	0.03	0.16	1.80
			15	16	1	0.07	0.04	0.14	0.32	0.25
			19.2	72	52.8	0.09	0.06	0.27	0.10	0.50
		incl.	19.2	31	11.8	0.10	0.08	0.19	0.08	0.24
		&	24	31	7	0.12	0.11	0.15	0.01	0.25
		&	36	56	20	0.08	0.04	0.35	0.12	0.54
		&	60	72	12	0.12	0.08	0.35	0.15	0.84
		&	70	72	2	0.36	0.29	0.67	0.24	0.25
MIDD010	100		9	12	3	0.04	0.02	0.13	0.12	0.48
			14	55	41	0.20	0.18	0.22	0.11	0.34
		incl.	14	27	13	0.28	0.24	0.28	0.07	0.36
		&	31	36	5	0.16	0.12	0.35	0.12	0.46
		&	40	55	15	0.25	0.22	0.21	0.18	0.28
		&	40	41	1	1.89	1.85	0.19	0.42	0.70
		&	50	51	1	0.26	0.14	0.53	1.24	0.25

## 10.11 Significant Reverse Circulation Drill Intersections

The significant intersections from reverse circulation drilling are summarized in Table 10-5. The data aggregation methods used in the reporting of mineralised intersection in Table 10-5 are based on an envelope of 1000 ppm Co. and/or 1000ppm Co. Higher grade included intervals are quoted to highlight elevated grades in either Au, Cu or Co. Metal price assumptions are Co US\$ 75,000/t; Cu US\$ 7,100/t; Au US\$ 1,250/oz; Ag US\$ 17/oz. The assay results for MIRC024-MIRC026 were reported to the TSX on January 17, 2018. The assay results for MIWB001 were reported to the TSX on April 30, 2018.

Drill holes are oriented between 10-20 degrees off an ideal perpendicular intersection in both plan and section. The true thickness of mineralised intersection is approximately 80% of the reported intervals.

**Table 10-5 Significant Mineralised Intersections Reverse Circulation Drilling**

BHID	Depth (m)		From (m)	To (m)	Int. (m)	Co Eqv (%)	Co (%)	Cu (%)	Au (g/t)	Ag (g/t)
MIRC024	157		33	39	6	0.08	0.06	0.15	0.14	0.05
		incl.	33	35	2	0.04	0.02	0.10	0.24	0.07
		&	36	37	1	0.28	0.28	0.02	0.05	0.02
			52	55	3	0.05	0.02	0.23	0.10	0.10
			67	104	37	0.11	0.07	0.28	0.11	1.87
		incl.	67	68	1	0.18	0.18	0.02	0.03	0.09
		&	84	90	6	0.16	0.06	0.76	0.31	2.83
		&	94	95	1	0.20	0.17	0.27	0.13	0.95
		&	102	104	2	0.47	0.43	0.36	0.13	0.40
			116	133	17	0.06	0.04	0.16	0.05	0.29
		incl.	116	118	2	0.18	0.17	0.15	0.06	0.18
		&	123	125	2	0.09	0.02	0.64	0.19	1.22
		&	128	129	1	0.05	0.02	0.26	0.07	0.39
&	131	133	2	0.05	0.04	0.12	0.02	0.25		
MIRC025	157		91	104	13	0.14	0.10	0.33	0.17	0.05
		incl.	91	98	7	0.21	0.15	0.45	0.25	0.07
		&	92	94	2	0.40	0.27	1.04	0.56	0.14
			122	139	17	0.22	0.18	0.32	0.08	0.51
		incl.	127	139	12	0.26	0.23	0.27	0.05	0.69
MIRC026	157		104	132	28	0.23	0.20	0.35	0.08	0.08
		incl.	104	106	2	0.13	0.18	2.34	0.85	0.32
		&	115	132	17	0.28	0.26	0.14	0.02	0.07
		&	127	128	1	1.11	1.11	0.04	0.02	0.08
			141	142	1	0.37	0.37	0.06	0.01	0.12
			145	146	1	0.05	0.04	0.12	0.01	0.04
MIWB001	77		2	47	45	0.02	0.02	0.05	0.01	0.25
			58	77	19	0.11	0.08	0.28	0.11	1.08
		incl.	63	64	1	0.15	0.13	0.22	0.10	0.25
		&	66	72	6	0.13	0.08	0.42	0.16	2.30

## 10.12 Interpretation of Drilling Results

Geologic cross sections for the six drill lines in the northern part of the deposit are displayed in Figures 10-3 to 10-7. The sections show mineralisation largely to be contained within the broad package of ferruginous quartzite and in graphitic schist in close vicinity of the quartzite unit with mineralisation paralleling the steep westerly dipping stratigraphy. The mineralisation extends into the conglomeratic metasediment in the footwall of the quartzite package.

The assay results from the RC drill holes in the southern part of the deposit (Figures 10-8 & 10-9) confirm mineralisation occurs as a discrete narrower zone of mineralisation within an intercalated sequence of graphitic schist and calc-silicate metasediments.

The recent drilling by GEMC/Hammer joint venture was successful in confirming the grade of mineralisation intersected in deeper, historical reverse circulation drill holes, with similar grades. The position of the mineralised intervals correlate well with the expected position of the mineralised lode given the steep, westerly dip. The drilling is interpreted to have successfully tested the up-dip continuity of the Co-Cu mineralisation in the northern portion of the Millennium Deposit.

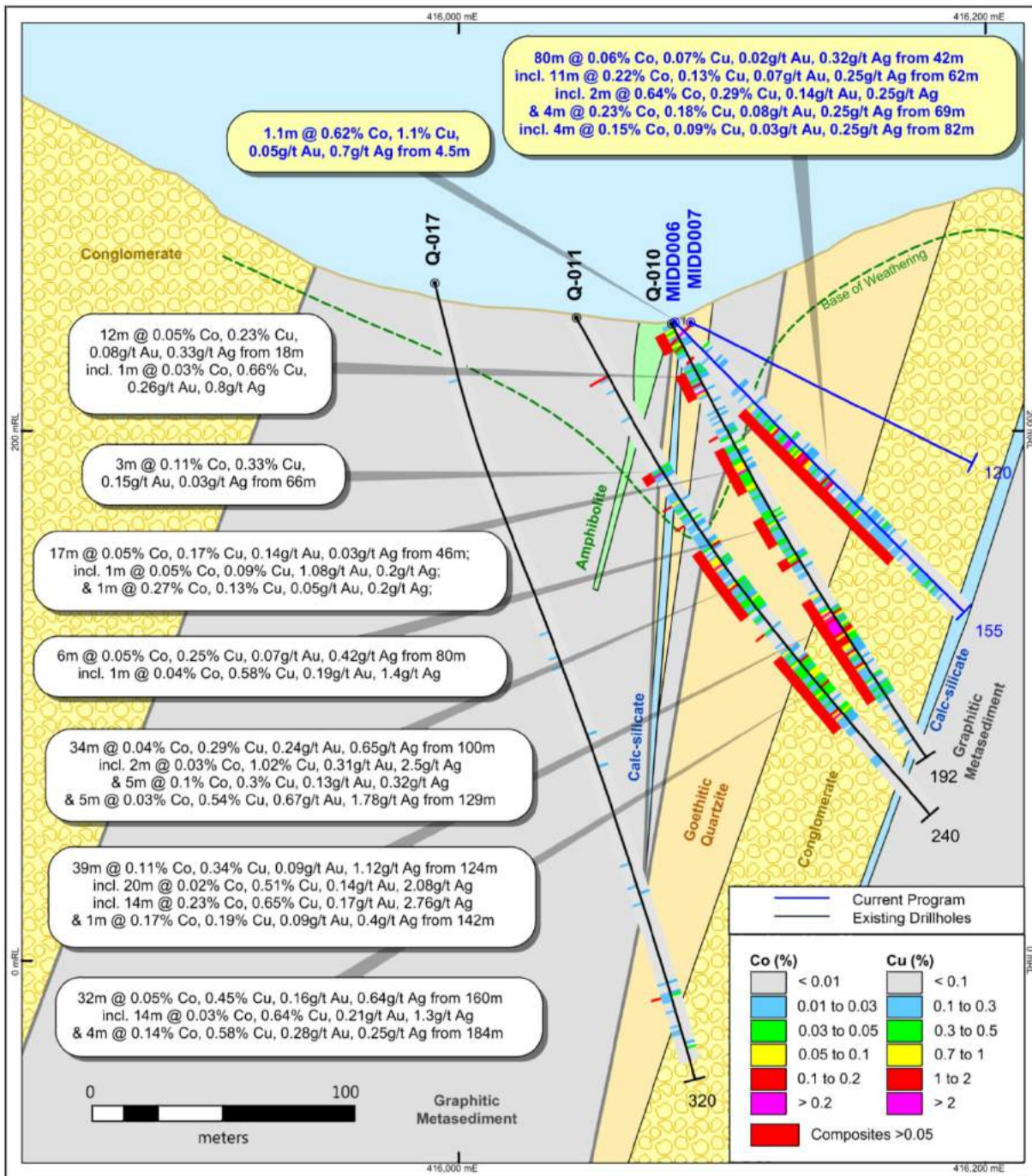


Figure 10-3 Section 7723590 with drill holes MIDD006 & MIDD007

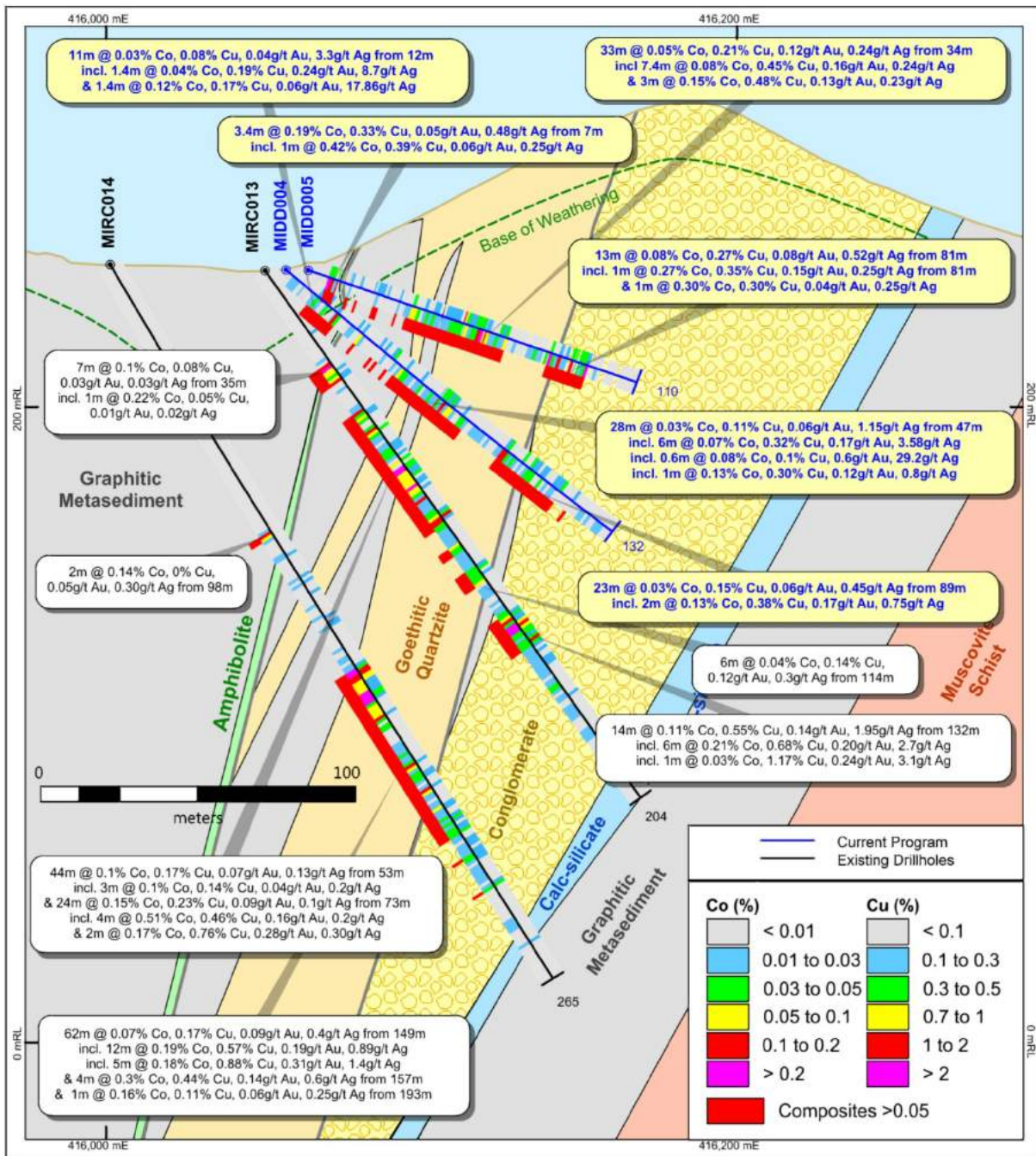


Figure 10-4 Section 7723535 with drill holes MIDD004 & MIDD005

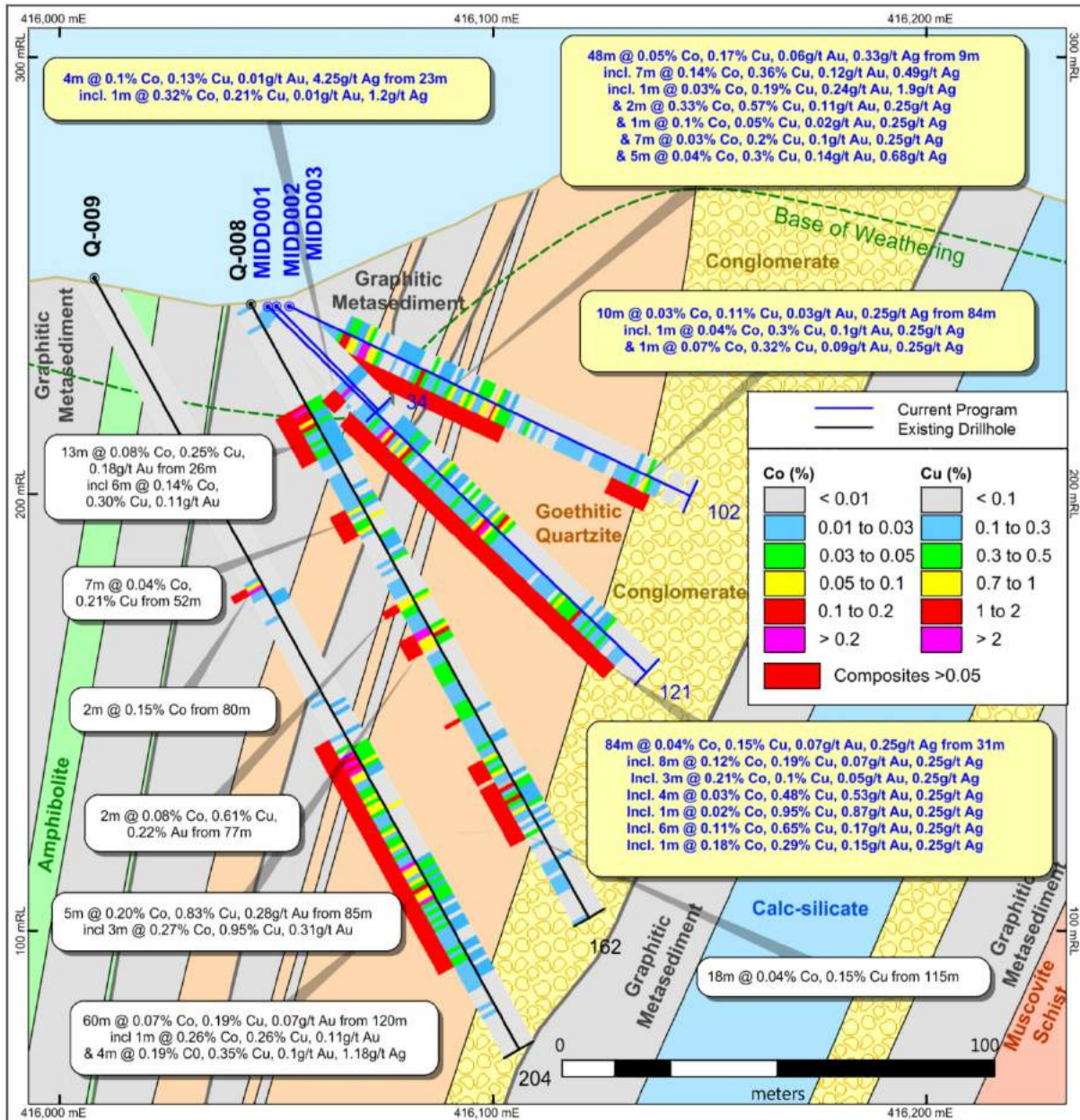


Figure 10-5 Section 7723500 with drill holes MIDD001, MIDD002 & MIDD003

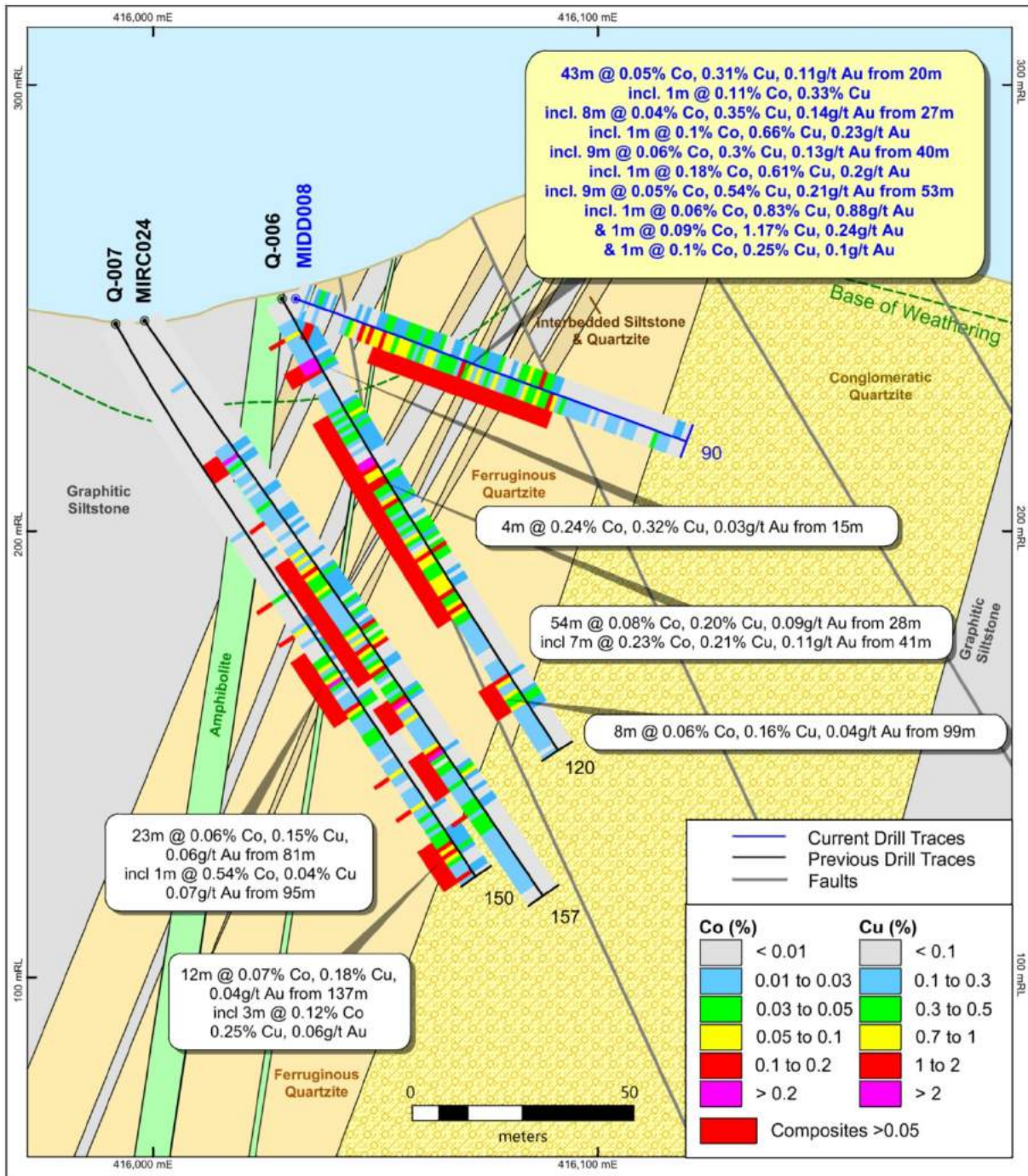


Figure 10-6 Section 7723400 with drill holes MIDD008

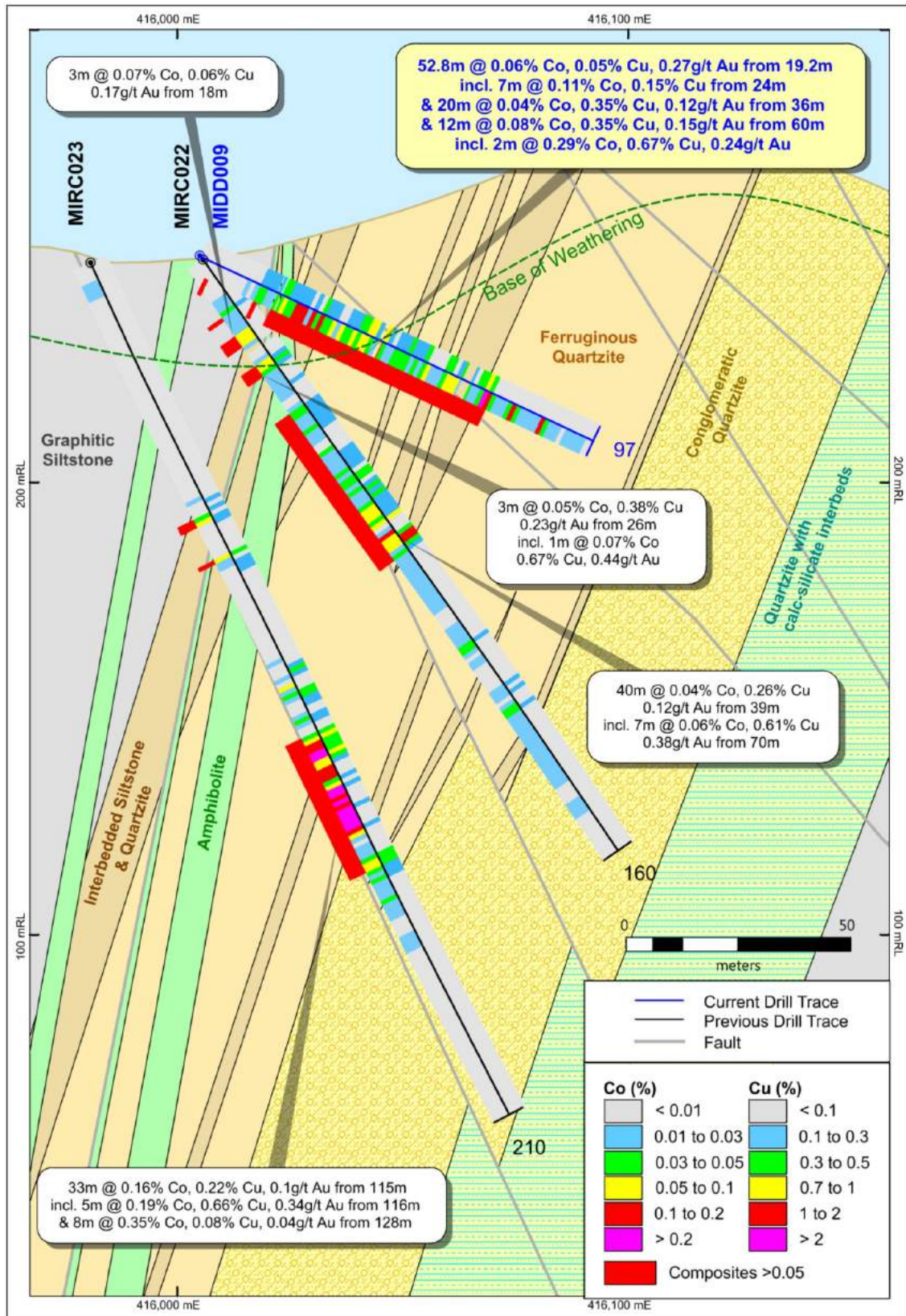


Figure 10-7 Section 7723360 with drill holes MIDD009



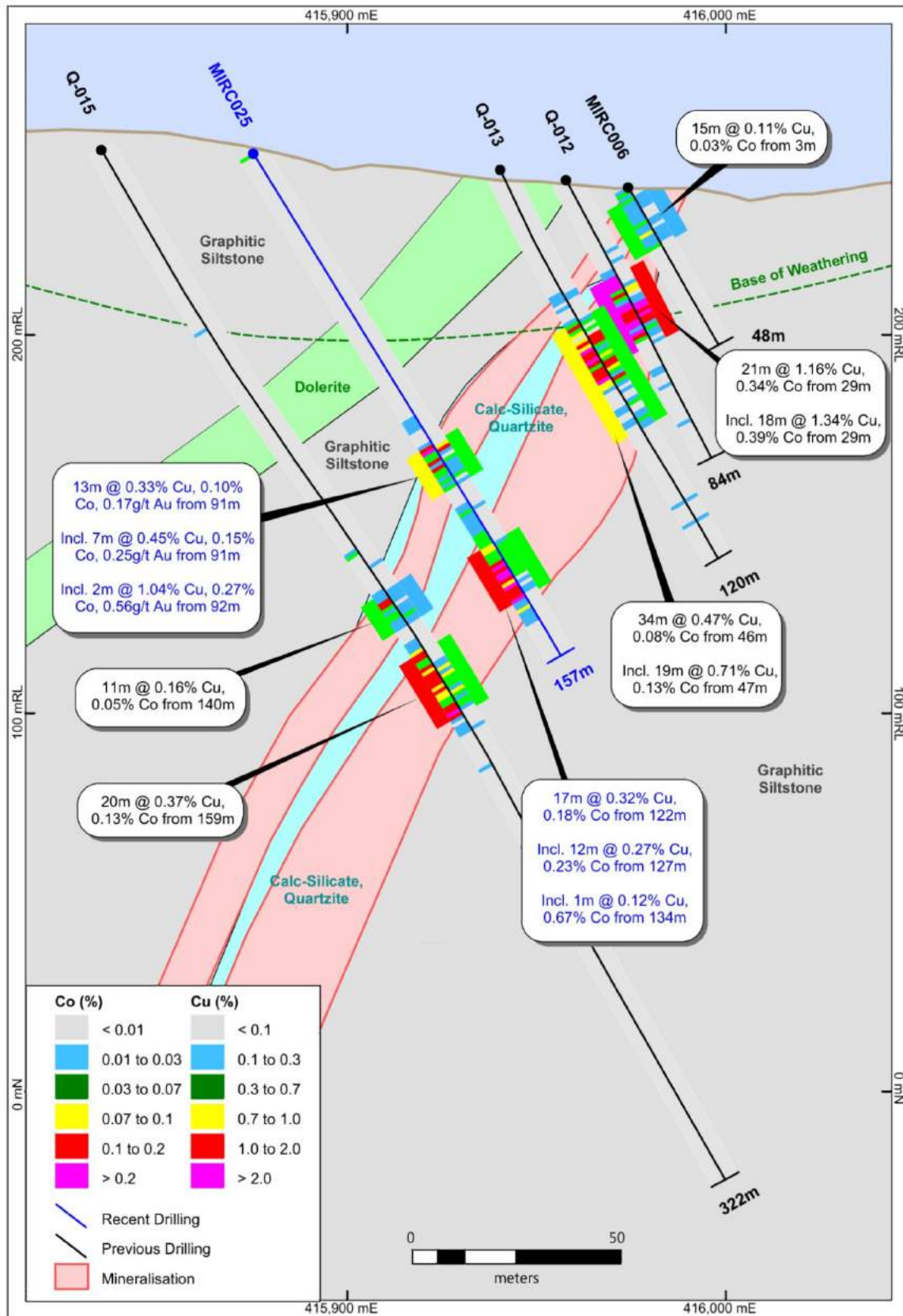


Figure 10-8 Section 7722800 with drill holes MIRC025

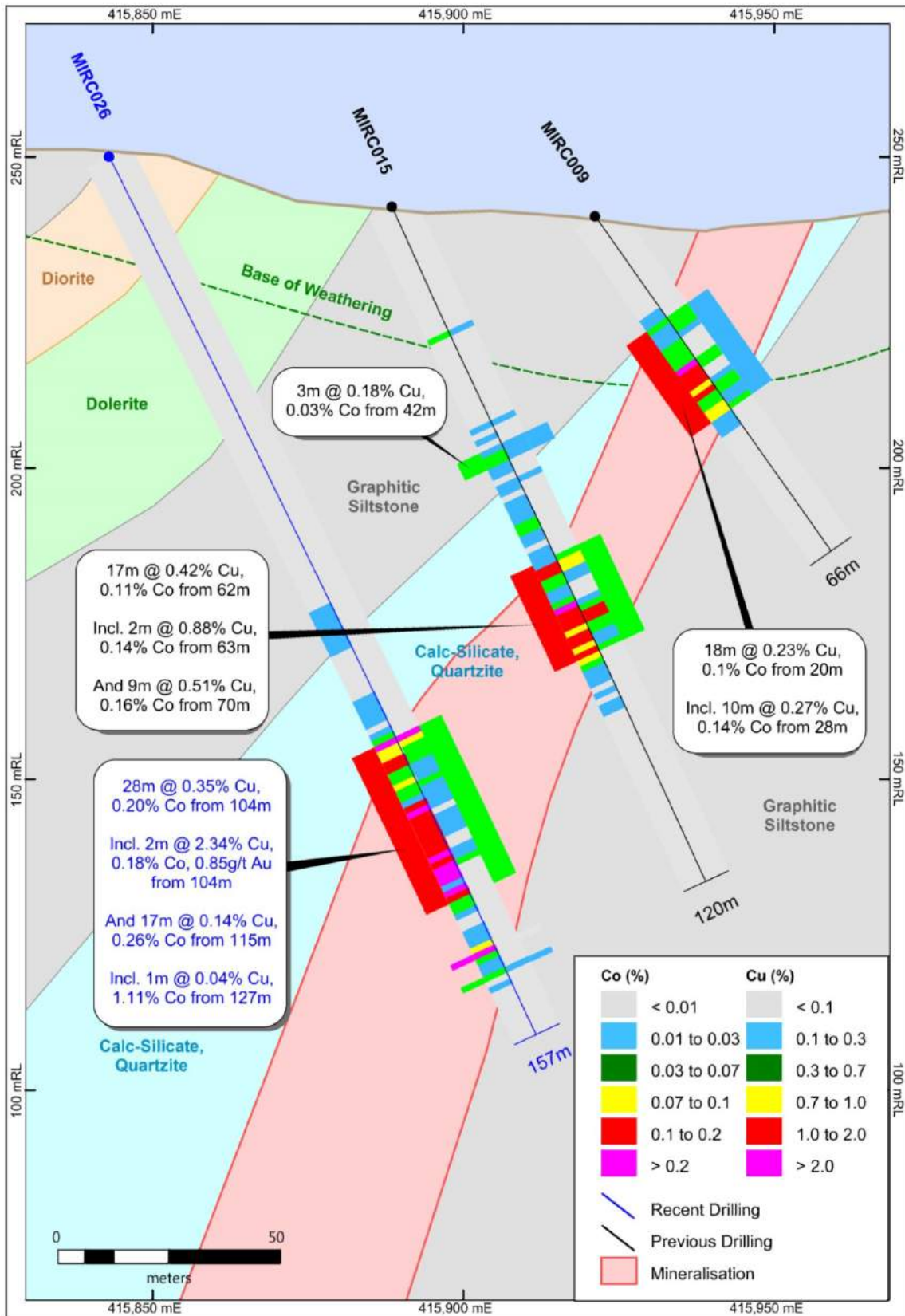


Figure 10-9 Section 7722675 with drill holes MIRC026

## 11 Sample Preparation, Analyses, and Security

All aspects of sample preparation and analyses associated with historical drill holes have been described in section 6. The discussion for GEMC procedures, analysis and security in 2018 relies on communication with Luke Pickering, Hammer Metals geologist during the site visit.

### 11.1 Sample Preparation

#### 11.1.1 Diamond Core

Drill Core was directly placed into plastic core trays by the drill helper at the drill site. Core run interval were marked on wood blocks and placed at the end of each core run. Drill core was received daily by the site geologist and logged at the core processing facility in Cloncurry (Plate 11-1). The core is photographed both wet and dry and logged by site geologists.



**Plate 11-1 GEMC/Hammer Metals Ltd Core Preparation facility in Cloncurry**

The core is then marked for sampling by the project geologist. Sample intervals were selected on nominal one metre intervals in visibly mineralised intervals and in 4 metre composite intervals in un-mineralised intervals. A portable XRF analyser was used to guide the most suitable sampling intervals. The core is split by a diamond saw.

### 11.1.2 RC Chips

Reverse circulation samples are collected on one metre intervals by drill helpers at the drill site, under the direct supervision of an experienced geologist. The geologist made changes as need to the rotary splitter to assure quality and sample size. The recovery was based on a visual estimation of material in each run. A complete chip tray record was maintained and a photographic record.

The RC was drilled dry using a booster and auxiliary compressor. Care was taken to avoid sample contamination. RC chip samples were collected in a plastic bag in a bucket under the secondary port of the cyclone and rotary splitter in order to direct proper sample delivery.

Drilling was paused at sampling intervals to ensure all sample from the interval is collected before continuing drilling into the next sample interval. Cyclone and sample splitters were cleared of build up to avoid sample contamination. The drill hole was blown clean after each rod addition by lifting the rotating drill string off bottom and blowing until there is no return of drill cuttings. No sample recovery bias was observed through the mineralised zones.

The entire length of each hole (MIRC001-MIRC0023) was submitted for assay either as a 1 metre sample or a 4 metre composite. The decision on the sample length was based on the XRF copper-cobalt response and visual appraisal.

## 11.2 Sample Analysis

Core and RC samples are submitted to ALS Laboratories in Mt. Isa, which is fully independent of GEMC and is ISO certified (ISO 17025). All samples submitted for assay underwent a sample preparation involving a fine crush with 1kg riffled off for pulverising to 75 microns.

Hammer samples (MIRC-holes) were delivered to ALS Mt. Isa for sample preparation. Upon receipt, the ALS technician reconciled the laboratory submission report against the submitted samples, and then placed the samples in sequential order on a trolley before placing them inside the oven. RC samples were disc pulverised only. Entire samples, regardless of size, were processed, in multiple passes as necessary. A 200 gram split was riffle split from the pulverised sample as a master pulp.

All samples submitted for assay underwent a fine crush with 1kg riffled off for pulverising to 75 micron. Drilling samples were submitted for 4 acid digest followed by fire assay for gold (50-gram charge) and ICP analysis for a range of elements including copper, silver, cobalt and molybdenum. The samples were also analysed for rare earth elements.

All reverse circulation samples were analysed by ALS for a range of elements by ME-ICP61 or ME-MS62r after a 4-acid digest. Gold was analysed by Au-AA26. Cu values

greater than 1% were re-analysed by ME-OG62. Any other elements which exceeded their maximum analytical limits were re-analysed by the relevant over-grade methods tailored for the element.

Hammer drill hole samples underwent gold analysis by 50g fire assay with an AAS finish. A broad suite of elements, including base metals, were analysed for by multi-acid digestion with hydrofluoric acid followed by a mix of ICPAES, and ICPMS (with REE determination).

All results were checked by alternative company personnel for identification of errors.

### 11.3 Specific Gravity Data

A total of 470 samples were taken for specific gravity measurements from the diamond drilling. The average specific gravity for the project is 2.62g/cm<sup>3</sup>. KCL consider the specific gravity values to be of good quality and could confidently be used in future mineral resource estimates.

### 11.4 Quality Assurance and Quality Control Programs

Drilling programs carried out at Millennium by the GEMC/Hammer JV have included QA/QC procedures using certified standards and field duplicate samples. Field duplicates and standard control samples were used at a frequency of 3 field duplicates, 4.5 certified standards and 4.5 certified blanks per 100 samples (Table 11-1).

Assay data from the laboratory is maintained in a Microsoft SQL Server database by Hammer and undergoes validation checks and QA/QC analysis.

Twenty anomalous Cu, Co coarse rejects were re-submitted to ALS for fusion XRF analysis of a suite

**Table 11-1: Summary of Analytical Quality Control Data Produced By Global Energy Metals Corporation on the Millennium Project**

Sampling Program	DDH		Comment
	2018 (%)	Total (%)	
Sample count	1395	100	Combined RC/DD
Field blanks	60	4	OREAS 27b
Standard CRM 1	60	4	OREAS 59A
Field duplicates	21	1.5	
Preparation duplicates	108	7.74	
<b>Total QC Samples</b>	<b>249</b>	<b>17.24%</b>	
Check assay to umpire laboratory			

KCL deems all the QC checks to be within industry standard limits. Charting of standard, blank and duplicate performance can be seen in Appendix B.

## **11.5 Sample Security**

The drill core samples at the logging area in Cloncurry are under the supervision of the site geologist. The area is fenced and secure from general public entry. Only authorised employees are allowed access.

Samples are delivered directly to ALS by GEMC/Hammer employees. Chain of custody documentation is employed with the geologists, delivery driver and ALS recipient signing for custody and receipt. Pre-numbered bags are used and transported by company personnel to the ALS Laboratory in Mt. Isa. ALS transports samples to its laboratories in Townsville or Brisbane as required.

Following the logging and sampling of drill core, the half core is transported to a secure warehouse in Mt. Isa (Plate 11-2).

Assay files are received electronically from the laboratory. Repeat results are kept independent and are not averaged. Below-detection limit (BDL) results are saved in the database as -BDL values. BDL results are converted to half the detection limit value on export from the database. The intersections with contain 'below detection limits using an adjusted value which is half the listed detection.



**Plate 11-2 GEMC/Hammer Metals Ltd Secure Core Storage Facility, Mt. Isa**

## 11.6 KCL Comments

The drill samples have been sent to commercial laboratories using standardised, industry practice base metal analysis with laboratory QA/QC protocols in place. In KCL's opinion, the sampling preparation, security and analytical procedures and QA/QC used at the Millennium Project are consistent with generally accepted industry best practices and are adequate for use in future ore resource estimation for this style of deposit.

## 12 Data Verification

Data verifications carried out by KCL include:

- Discussions with Hammer Metals Ltd geologist Luke Pickering
- Site visit to the project
- Manual auditing of the drill hole database received from GEMC/Hammer Metals
- A limited audit of exploration work conducted
- Review of information obtained from historical reports and internal company reports.
- Checking of drill hole data against historical and current geological sections

### 12.1 Site Visit

KCL representative and QP C.J Picken AusIMM, MIMMM conducted an on-site inspection of the Millennium Project on January 16 through January 18, 2019. Mr. Picken spent three full days at Project site accompanied by Luke Pickering, geologist of Hammer. Whilst on-site Mr. Picken conducted general site and geologic field reconnaissance including examination of surface bedrock exposures, ground truthing of reported drill collar locations. Mr. Picken also examined selected core intervals from drill holes MIDD001, MIDD008 and MIDD010 and historical RC chips from previous drill campaigns. The conceptual geological model, data entry management protocols and drilling and sampling procedures and the associated quality ('QA/QC') methods presently employed were also reviewed.

Field observations during the site visit generally confirm previous reports on the geology of the Project area. Bedrock lithologies, alteration types and significant structural features are all consistent with descriptions in existing Project reports, and the author did not see any evidence in the field that might significantly alter or refute the current interpretations regarding local geology and mineralisation (as described in Section 7 of this report).

Specific core intervals from a variety of drill holes (both historic and modern) were selected for visual inspection based on a preliminary review of the drill hole logs and associated assay values. All core intervals requested were available. In all cases, the core samples chosen for inspection accurately reflect the lithologies recorded on the drill logs, and the degree of visible alteration and evidence of mineralisation observed is consistent with the grade range indicated by reported assay values.

### 12.2 Database Audit

The following tasks were completed as KCL's database audit.

- Mechanical audit of the database
- Validation of the geologic information



- Validation of the assay values contained in the exploration database as compared to assay certificates from records provided by GEMC/Hammer Metals Ltd.

The database provided to KCL contained rock-type, alteration, mineralisation, geotechnical, specific gravity, assay, drill hole collar and downhole survey data.

### 12.2.1 Mechanical Audit

The mechanical audit of the drill hole database was completed. The database was checked for missing values, duplicate records, interval overlap errors, from-to data exceeding maximum collar depth. No errors were identified by KCL. The database review by Haren identified various database errors in historical data that had already been amended in the data received by KCL. These included inaccurate downhole surveys causing unrealistic drill hole deflections.

### 12.2.2 Manual Audit

KCL completed a manual audit of the digital Project database by comparing a selection of original laboratory source files to the assay information contained in the Millennium Project database. No errors were detected in the 100 files examined. All entries exactly match gold grades in the database.

## 12.3 Sample Assay Verification

Kangari selected 14 intervals for the verification of recent and historical assays. The check assays are displayed in red text with the corresponding assay in the database in black text. The results show excellent correlation with the majority of Co and Cu check assays returning within 1-2% of the original reported assay (Table 12-1).

**Table 12-1 Check Assays**

Hole ID	From	To	Check ID	Orig_ID	Co ppm		Cu ppm		Au ppm		Ag ppm		As ppm	
MIRC013	136	137	E50614	E41487	3320	3180	10450	9750	0.32	0.33	4.8	3.4	4170	4260
MIRC013	137	138	E50615	E41488	3890	3750	12250	12050	0.41	0.38	4.7	5.4	4150	4130
MIRC013	138	139	E50616	E41489	3130	3070	7100	7060	0.16	0.14	3.9	2.8	3070	3180
MIRC013	139	140	E50617	E41490	401	411	3110	3110	0.07	0.07	1.3	1.3	359	378
MIRC013	140	141	E50618	E41491	344	315	5840	5420	0.12	0.14	2.7	2.0	254	243
MIDD010	40	41	E50619	E49581	18100	18500	1880	1890	0.42	0.42	<0.5	0.7	22000	23300
MIDD010	41	42	E50620	E49582	2360	2290	2240	2080	0.08	0.11	<0.5	<0.5	2770	2810
MIDD010	42	43	E50621	E49583	160	149	1590	1570	0.12	0.09	<0.5	<0.5	52	55
MIDD010	43	44	E50622	E49584	245	243	5930	5930	0.19	0.19	<0.5	<0.5	43	50
MIDD010	44	45	E50623	E49585	345	330	4400	4420	0.21	0.19	<0.5	<0.5	82	80
MIDD004	64	65	E50624	E48840	233	213	6850	6600	0.13	0.13	<0.5	0.8	77	63
MIDD004	65	66	E50625	E48841	1325	1260	3030	3030	0.14	0.12	<0.5	0.8	1460	1470
MIDD004	66	67	E50626	E48842	237	214	1230	1200	0.04	0.04	<0.5	0.7	40	37
MIDD004	67	68	E50627	E48843	679	627	4360	3940	0.10	0.10	0.7	0.8	587	567

## **12.4 Adequacy of Data**

Based on the results of KCL's site investigation and data validation efforts, KCL considers the GEMC/Hammer Metals Ltd drilling and sampling data, as contained in the current Project database is according to general industry accepted standards and suitable for use in the reporting of historical mineral resources and for future mineral resource estimations.

## 13 Mineral Processing and Metallurgical Testing

### 13.1 Current Metallurgical Test Work

A preliminary metallurgical test work program was completed by ALS Adelaide (2018) on two composite ¼ core samples of quartzite. One sample was a high-grade composite with head assay: Cu 0.45% Co 0.18% Au 0.16 ppm. The second sample a low-grade composite sample with head assay: Cu 0.28%, Co 0.04% Au 0.09 ppm.

The test work was aimed at establishing suitable rougher flotation conditions processing the samples. Chalcopyrite and pyrite were the dominant sulphides in the samples with minor cobaltite.

The sulphides were well liberated with average grain size 300-600µm. The Bond Abrasion Index were 0.2849 and 0.2875 for the samples with Bond Ball Mill Work Index of 17.9 kWh/t and 18.8 kWh/t.

Separate Cu/Au and Co/Au concentrates were produced from both high and low grade samples with recoveries of 95.1% Cu, 95.4% Co and 81.4% Au for the high grade composite sample and 91.3% Cu, 91.7% Co and 77.9% Au for the lower grade composite sample.

Metallurgical work to date is considered to be preliminary in nature and does not currently represent the mineral deposit as a whole.

To date there is not processing factors or the presence of deleterious elements that could have a significant effect on potential economic extraction.

## **14 Mineral Resource Estimates**

A Current Mineral Resource Estimate has not been declared for the Millennium Co-Cu-Au Project

## **15 Mineral Reserve Estimates**

A Mineral Reserve Estimate has not been declared for the Millennium Co-Cu-Au Project

## **16 Mining Methods**

This section is not applicable to this report.

## **17 Recovery Methods**

This section is not applicable to this report.

## **18 Project Infrastructure**

This section is not applicable to this report.

## **19 Market Studies and Contracts**

This section is not applicable to this report.

## **20 Environmental Studies, Permitting, and Social or Community Impact**

This section is not applicable to this report.

## **21 Capital and Operating Costs**

This section is not applicable to this report.

## **22 Economic Analysis**

This section is not applicable to this report.

## 23 Adjacent Properties

The exploration permits surrounding the Millennium Project ML's are held by Rio Tinto, Roseby Copper (South) Pty Ltd, and Mount Isa Mines Ltd (Figure 23-1). Altona Mining Ltd drilled four RC holes on EPM 25759 and EPM 25761 on a large copper in soil anomaly > 1000 ppm to a depth of 70-91 metres on 160 metre spacing prior to its acquisition by Canada's Copper Mountain Mining Corporation in April 2018. Significant copper was intersected in drill holes HB001 to HB003.

Significant copper in rock chip samples were reported on current EPM25759 by CYU to the Australian Stock Exchange on 8<sup>th</sup> November 2013 immediately adjacent to ML2761 and ML2761. Grades of 5.46% Cu, 14.2 g/t Ag and 1310 ppm Co have been reported.

Mt. Isa Mines manage and sole fund exploration comprising the Carpentaria Joint Venture on EPM12561.

The QP is relying on this public information as being accurate and correct however has not been able to verify the information and that the information is not necessarily indicative of the mineralisation on the property that is subject to the technical report.

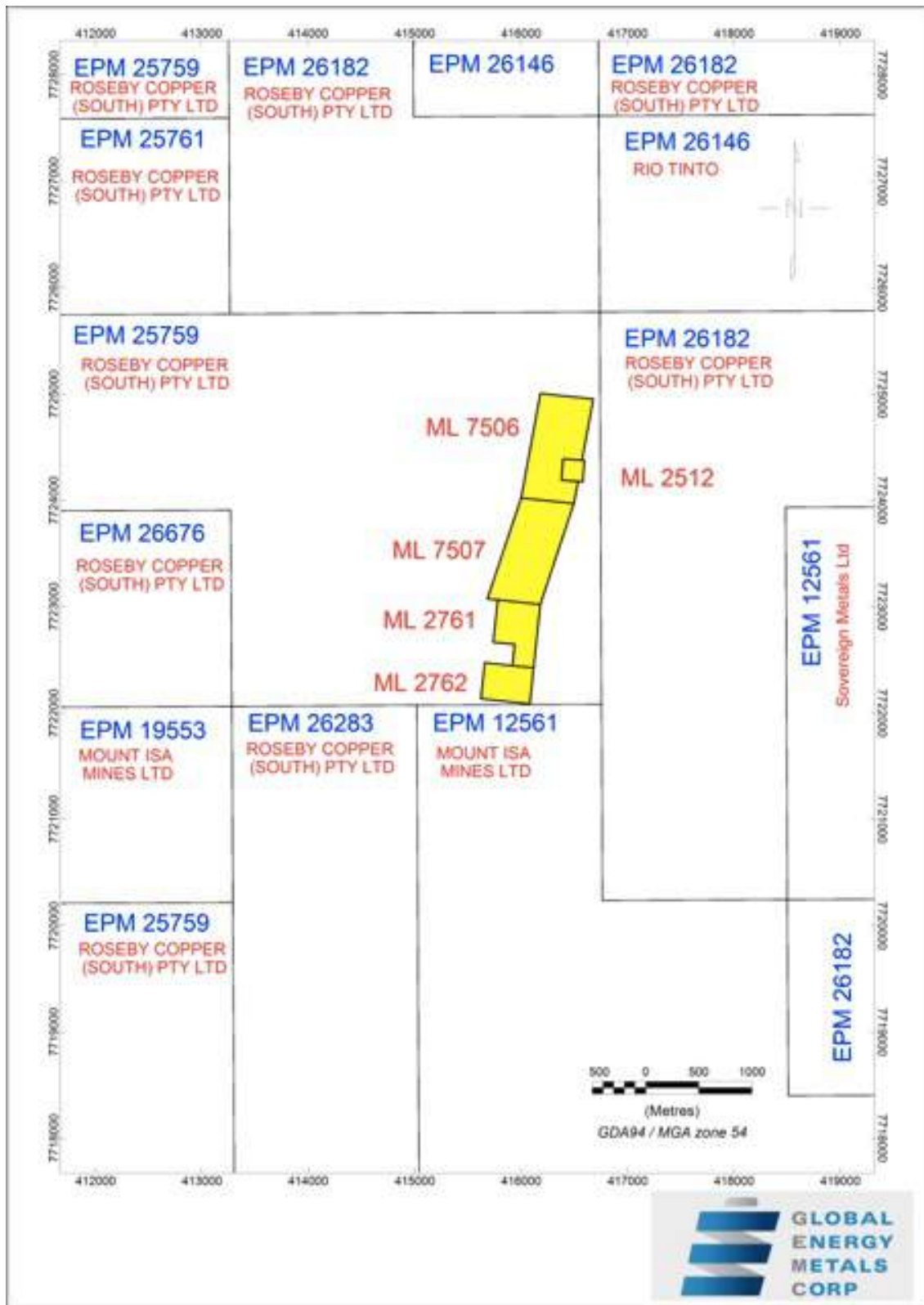


Figure 23-1 Millennium Licences and Adjacent Licences

## 24 Other Relevant Data and Information

There is no more relevant data or information for the Millennium Project.

## 25 Interpretation and Conclusions

The copper, cobalt and gold mineralisation at the Millennium Project is closely related to faulting, shearing and fracturing in close vicinity of the Pilgrim Fault, a major regional scale structure within the Mt. Isa Inlier.

The mineralisation that has been outlined by historical and current drilling is closely associated with a relatively thick sequence of ferruginous quartzite within a package of finer grained sediments including graphitic schists, meta-siltstone, meta-sandstone, conglomerate and calc-silicate rocks. The sulphide mineralisation, predominantly pyrite and chalcopyrite occurs as disseminations in altered metasediments, and in several generations of sulphide-rich veins and in quartz veins, commonly along lithological contacts.

The highest grade mineralisation outlined to date is contained within the main quartzite body along a 250 metre strike in the Northern Zone. The mineralised structure extends to the south along a 750 metre strike in graphitic schist and calc-silicates (Southern Zone). The competent, more rigid, quartzite in the Northern Zone is cut by numerous north-east and north-west trending fractures which appear to have been important in concentrating mineralisation.

A historical mineral resource for the Millennium deposit reported using the Australian JORC Code by Haren in 2016 estimated an inferred resource estimate of 3.1 Mt at 0.14% Co, 0.34% Cu and 0.12 g/t Au (using CuEq cut off of 1.0%). Kangari has not done sufficient work to classify the historical estimate as a current mineral resource or mineral reserve and GEMC is not treating the historical estimate as current mineral resources or mineral reserves. The Mineral Resource was classified as inferred, to JORC standard, by Haren (2016) on the basis of the sample spacing and degree of continuity to mineralisation. The QP's note that this resource is a historical resource and not NI43-101 compliant. In order to be considered to be a current 43-101 compliant resource GEMC will be required to complete an initial work program to include infill drilling and metallurgical work. The sampling preparation, security and analytical procedures and QA/QC used at the Millennium Project are consistent with generally accepted industry best practices and are adequate for use in historical and future ore resource estimation for this style of deposit.

There is excellent potential to increase the current inferred mineral resource at the Millennium Project by further resource definition drilling. The drill density is low along strike of the deposit to the north and deeper drilling beneath holes MIRC001 and

MIRC012 on section 7723700N and beneath drill holes Q011 and MIRC019 on section 7723650N is required to test for mineralisation possibly plunging to the north at depth.

There is also potential to increase resources within the current inferred zone by closer spaced infill drill holes identifying high grade shoots. There is also potential at depth below the current defined Mineral Resource to 280 metres depth.

The results of historical soil geochemistry followed up by rock chip sampling by GEMC across the Millennium Mining Leases have identified several promising targets that have never been drilled by previous operators. Kangari considers there is excellent potential to delineate further near surface resources particularly in northern parts of ML7506 where the critical zone of quartzitic rocks hosting the main resource have been mapped with coincident high grade Cu concentrations in rock chip samples.

The two mineralised zones in mica schist in eastern parts of ML2762 mapped by Hammer geologists with high grade Cu in rock concentrations are in the vicinity of the Federal Cu mine. There is gossanous material outcropping at surface in this part of the ML that has never been trenched or drilled. This area also has the potential to increase the ore resources at the Millennium Project.

Further diamond drilling is required for resources to be classified as indicated or measured categories under 43-101 reporting standards.

The results of preliminary metallurgical test work are encouraging for the Millennium Project with high recovery rates for copper, cobalt and gold in two composite samples from the recent 2018 diamond drilling program.

## **25.1 Risks and Uncertainties**

KCL is not aware of any significant risks and uncertainties that could be expected to affect the reliability or confidence in the early stage exploration information discussed herein.



## 26 Recommendations

Previous work completed on the licence prior to GEMC has focused on copper as the main mineral of interest. Due to high grade cobalt intersections in the recent drilling, it is the opinion of the authors that this is a project where cobalt could be the main mineral of interest. It is strongly suggested that the previous resource be updated and re-modelled using cobalt values as the basis for primary estimation. Advancing from phase 1 to phase 2 is contingent on positive results being received from phase 1.

### 26.1 Exploration Program

#### 26.1.1 Phase 1 – 0 to 12 months

- Detailed 25 metre infill grid soil geochemistry along a 250 metre strike in the Northern Extension in ML7506, along a 250 strike along the eastern part of ML2762 and grid over ML2512 (Total 337 samples). Locations can be seen in Figure 26-1.
- Test Self Potential Survey and ground magnetic traverses over known mineralisation.
- Detailed geologic and structural mapping of outcrop.
- Petrographic work on drill core mineralised samples.

#### 26.1.2 Phase 2 – 12 to 24 months

- Reconnaissance RC Drilling (approximately 1,500m) at the targets identified by detailed Phase 1 grid soil geochemistry.
- Detailed infill diamond drilling (approximately 3,000m) to further evaluate the existing ore resource. This will include drill holes to intersect the mineralisation at depth and include twinning of high grade and low-grade RC intersections. Diamond drilling required for improved understanding of the main structural controls to mineralisation.
- The implementation of a detailed geotechnical logging protocol.
- Generation of a density model for ore improved resource estimation.
- Remodeling of the deposit based on cobalt equivalent grades and a new resource estimation based on all drilling since the 2016 mineral resource by Haren (2016)
- Re-modelling of the geology and controls to mineralisation and generation of new wireframes

## 26.2 Exploration Budget

**Table 26-1: Estimated Cost for the Exploration Program Proposed for the Millennium Project**

<b>Phase</b>	<b>Description</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Cost</b>
<b>1</b>	Taxes			\$ 20,000.00
	Foreign Investment Review Board			\$ 25,000.00
	Soil Sampling	337	50	\$ 16,850.00
	Mapping	-	-	-
	Geophysics (SP)	30 Days	50	\$ 1,500.00
	Petrography	10	100	\$ 10,000.00
<i>Sub-Total</i>	-			<u>\$ 73,350.00</u>
<b>2</b>	RC Drilling	1500	150	\$ 225,000.00
	Diamond Infill Drilling	3000	200	\$ 600,000.00
	Remodeling Geology			\$ 25,000.00
	Resource Estimation			\$ 75,000.00
	PEA Preparation			\$ 125,000.00
<i>Sub-Total</i>				\$ 1,050,000.00
<i>Total of All Phases</i>				<b>\$ 1,123,350.00</b>
<i>Contingency 10%</i>				<b>\$ 112,335.00</b>
			<b>Total</b>	<b>\$ 1,235,685.00</b>

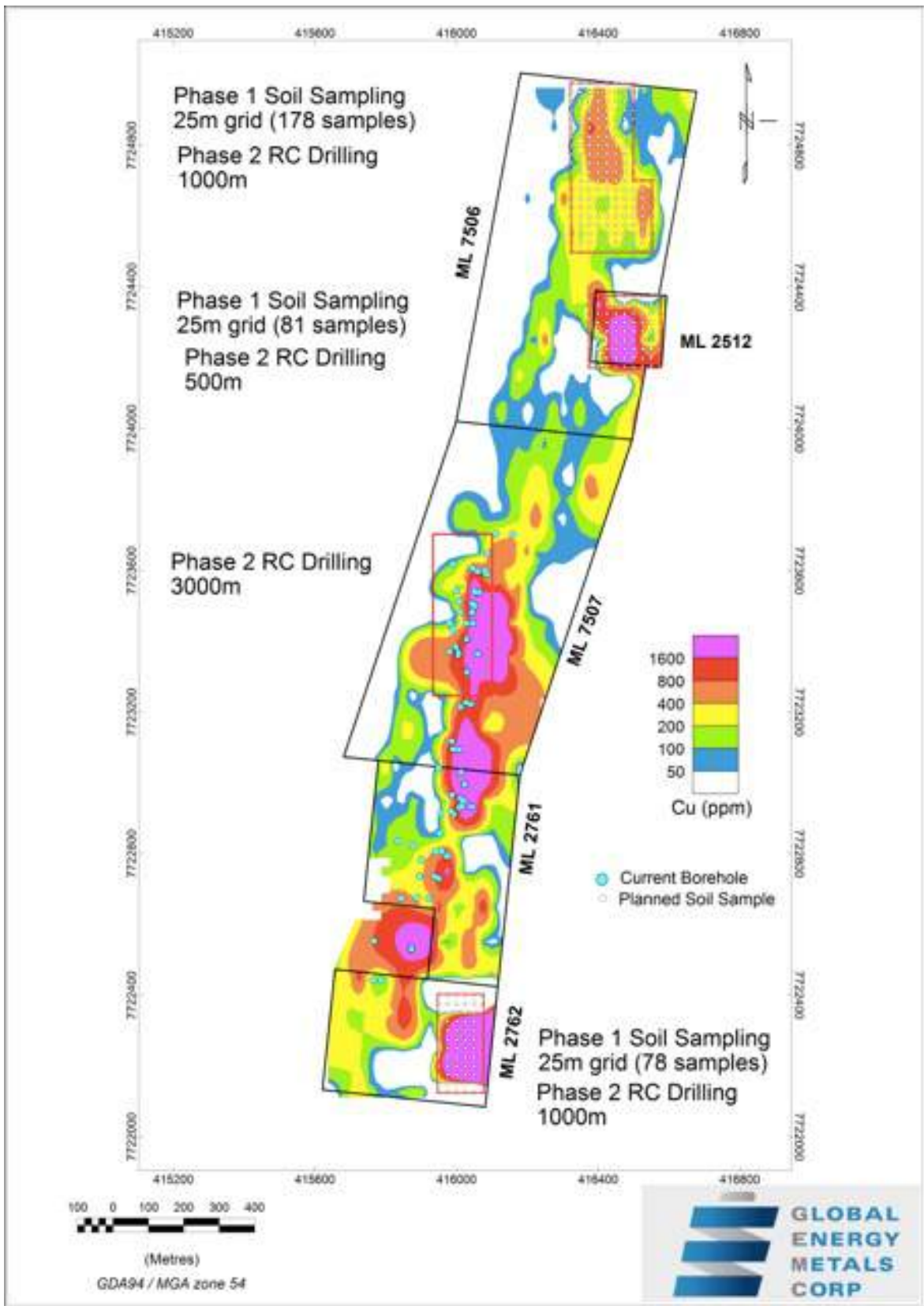


Figure 26-1 Phase 1 & 2 of Exploration Plan on Cu Geochemistry

KCL is unaware of any other significant factors and risks that may affect access, title, or the right or ability to perform the exploration work recommended for the Millennium Co-Cu-Au project.

## 27 References

- ALS Adelaide (2018) Preliminary Metallurgical Testwork on Ore Samples from Millennium Copper-Cobalt Deposit. Report No P0992 October 2018.
- Blake, D.H (1987) The Geology of the Mt. Isa Inlier and Environs Queensland and Northern Territory. Bureau of Mineral Resources, Geology and Geophysics, Australia Bulletin 225.
- Carter, E.K (1959) Department of National Development – Bureau of Mineral Resources, Geology and Geophysics Records 1959/95. Explanatory notes on the Cloncurry 4-mile geological map
- Haren Consulting (2016) Hammer Metals Ltd. Millennium Cobalt-Copper-Gold Project Mineral Resource Estimate, November 2016. Reference 1132.
- Teale, G.S (2017) A Mineragraphic and Petrological Investigation of a Suite of Percussion Chip Samples from the Millennium Project, Cloncurry Area, North Queensland. Report TA17-01
- Wyche, J. (2018) Rocklands Ore Reserve Update – ASX Market Release by CuDECO, March 22 2018.

# **APPENDIX A**

## **Mineral Tenure Information – Native Title**

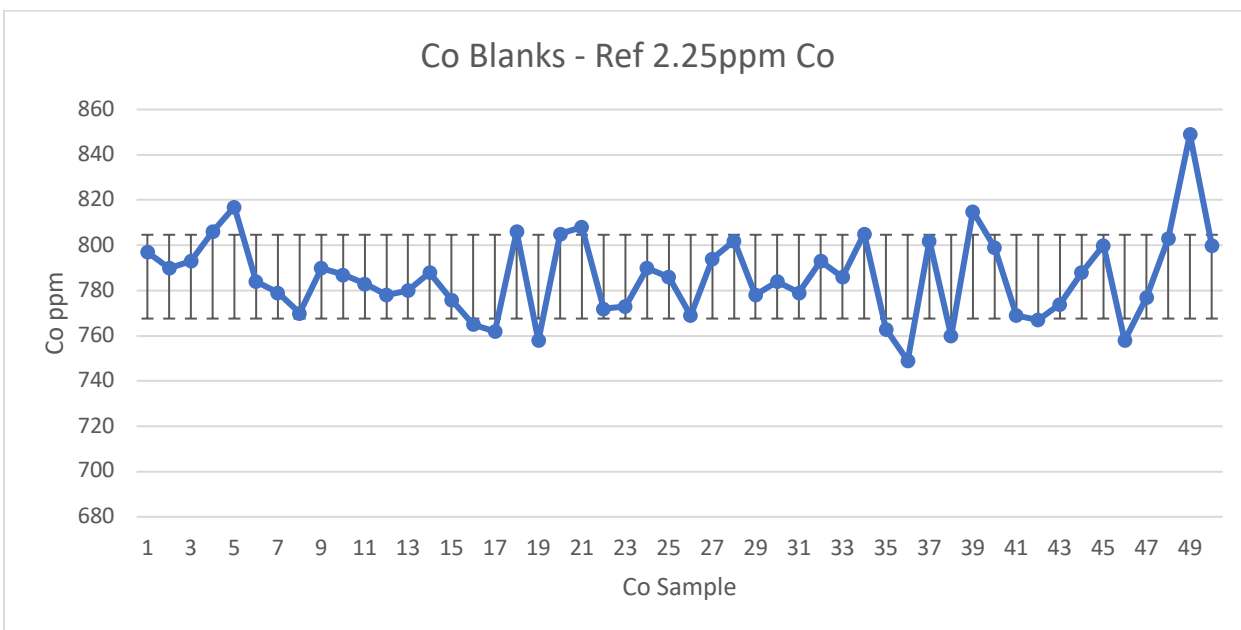
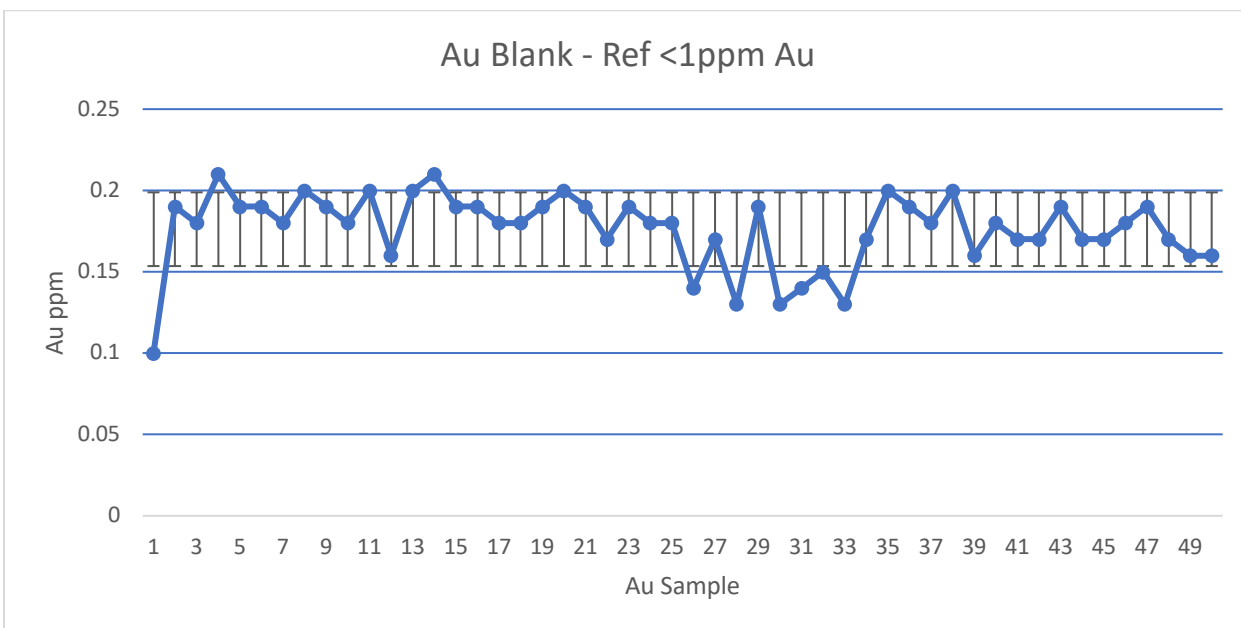
21.10.13 - 22.10.13

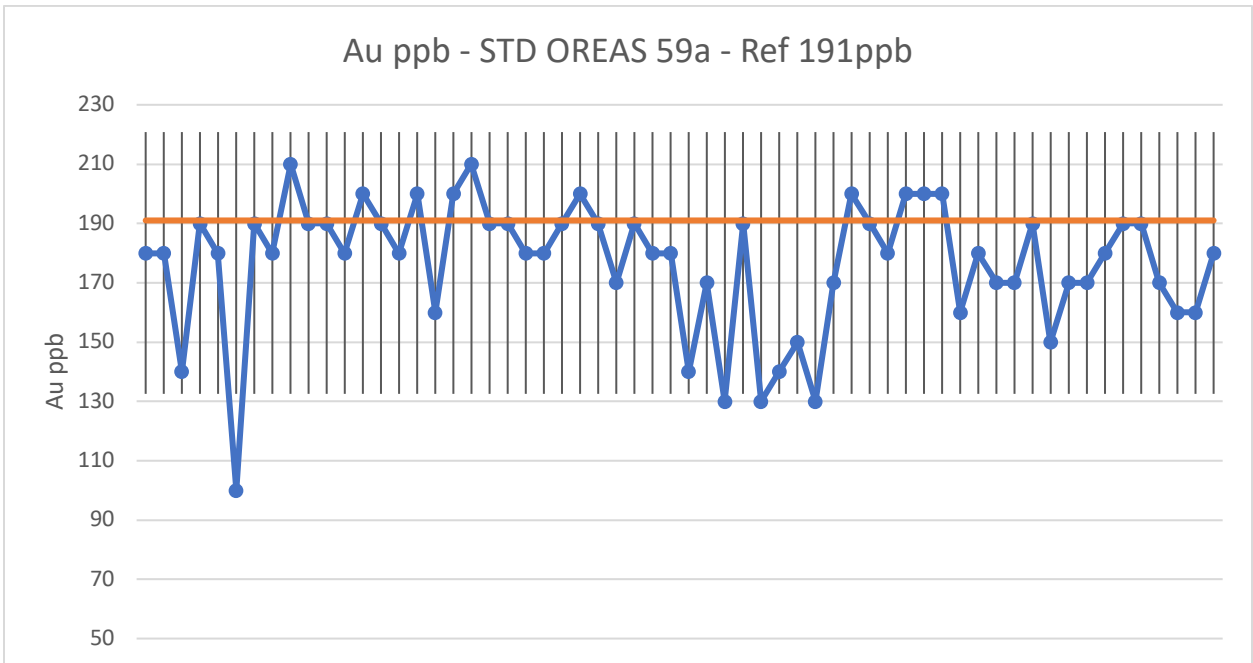
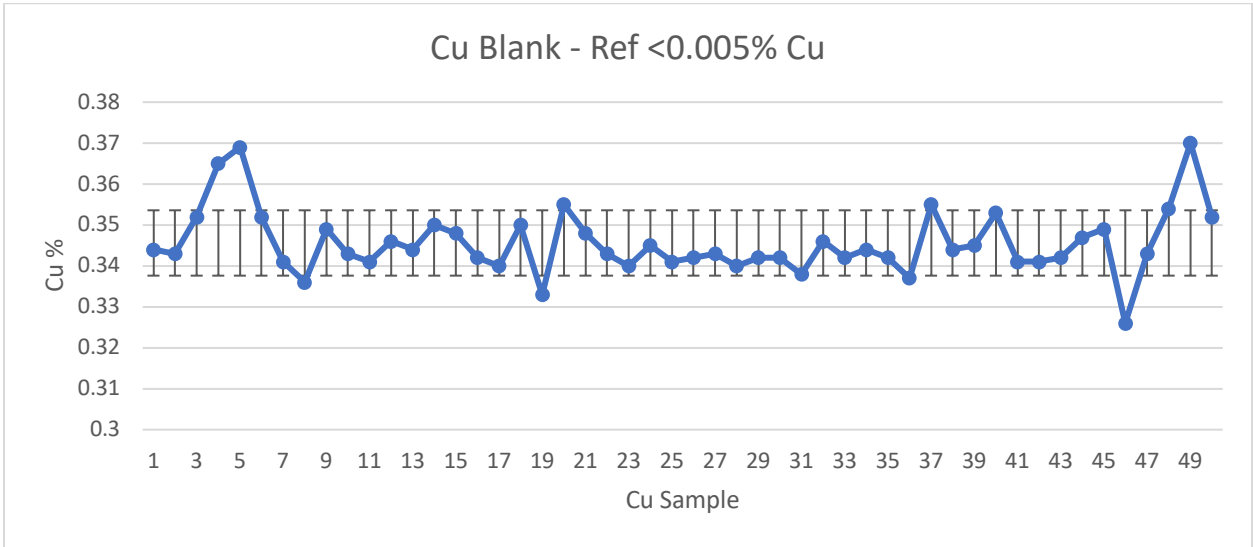
PROJECT: <i>MILLINIUM</i>		TYPE OF GRANT / AGREEMENT:
AREA TO BE CLEARED:		
INSPECTED BY:	REPRESENTING GROUP:	CONTACT DETAILS: (Optional)
<i>JUDY SAM 2 DAYS</i>	<i>KALKADOON</i>	<i>Judy Sam</i>
<i>MOLA APUL 2 DAYS</i>	" "	<i>MOLA</i>
<i>KYLIE STRAK 1 DAY</i>	" "	<i>Kylie Strak</i>
<i>MATTHEW DAMPSON 2 DAY</i>	" "	<i>M. Dampson</i>
<i>LAWRENCE PERCY 1 DAY</i>	" "	<i>L. Percy</i>
REPRESENTATIVES:	POSITION:	CONTACT DETAILS:
<i>GREG SMITH</i>	<i>FIELD TECH</i>	<i>0957159074</i>
<i>DYNE GREEN</i>	<i>FIELD TECH.</i>	<i>0421487863</i>
INSPECTION RESULTS: <i>C.P.S. MARK 008 LOCATION SE IK 0416526 - 7724630</i> <i>CHERP CHIPPING FOUND.</i>		
ACTION TO BE TAKEN: <i>20m BOUNDARY, PHOTOGRAPH, SIGN STATING SITE.</i>		
TOTAL FEE PAYABLE: (GST inclusive)		
(Payment will be made into the Kalkadoon trust fund for distribution on receipt of a tax invoice)		
ADDITIONAL COMMENTS:		

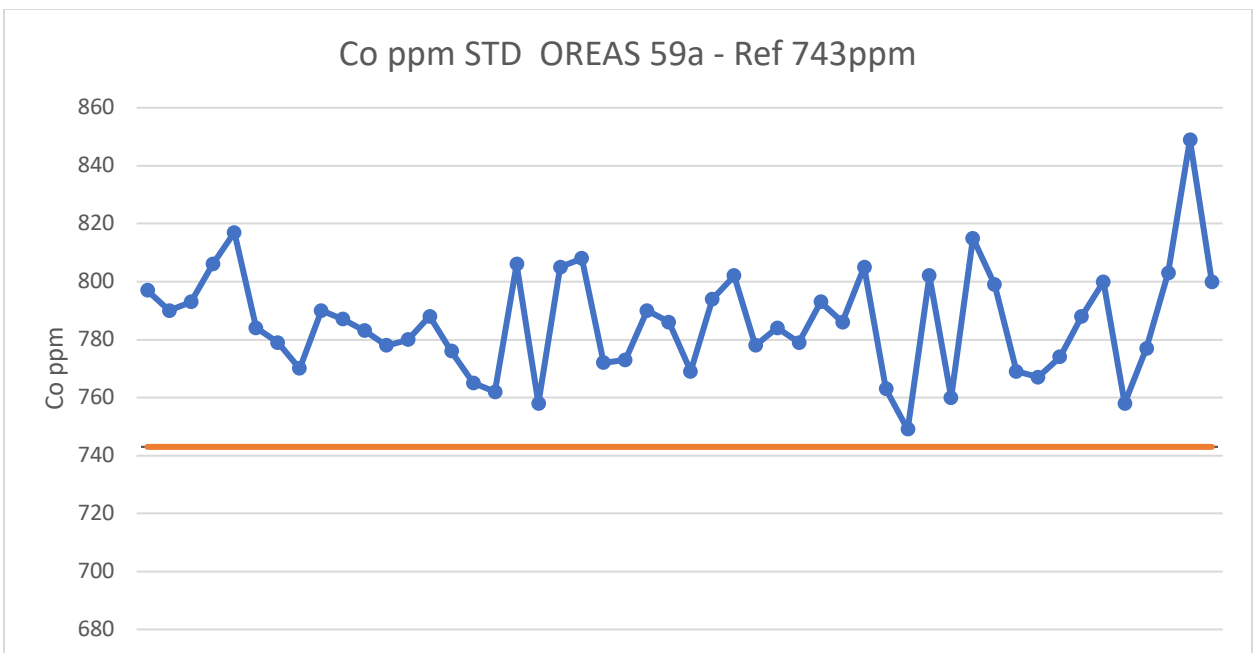
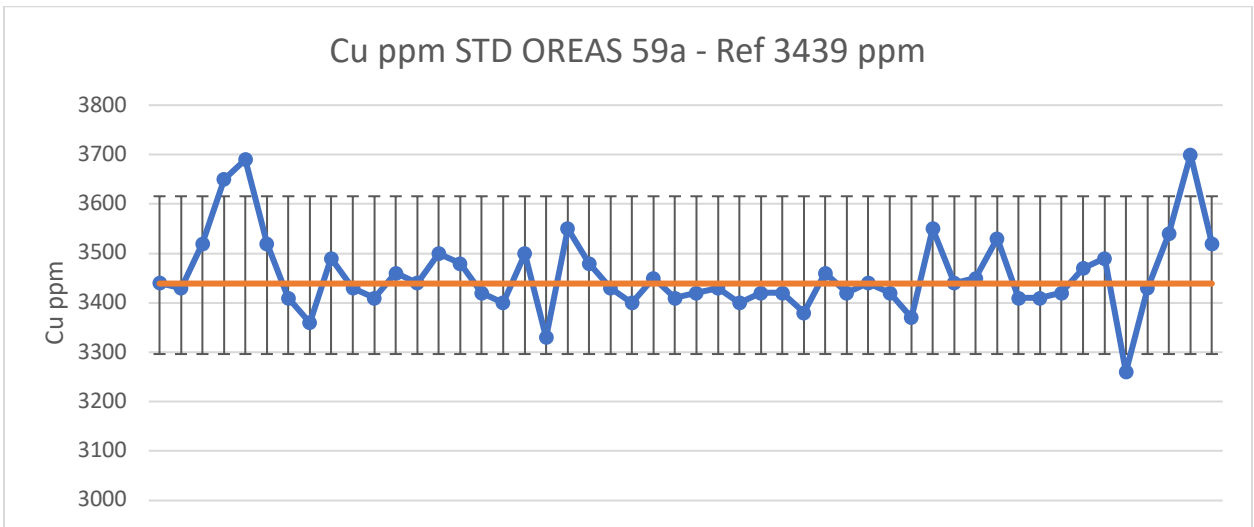
## **APPENDIX B**

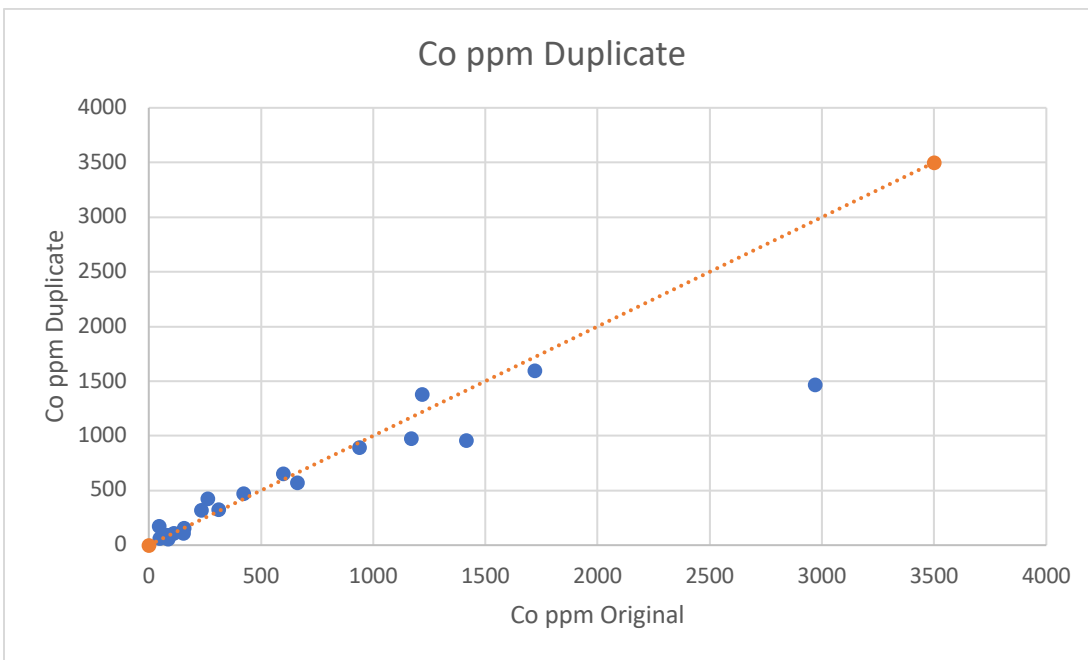
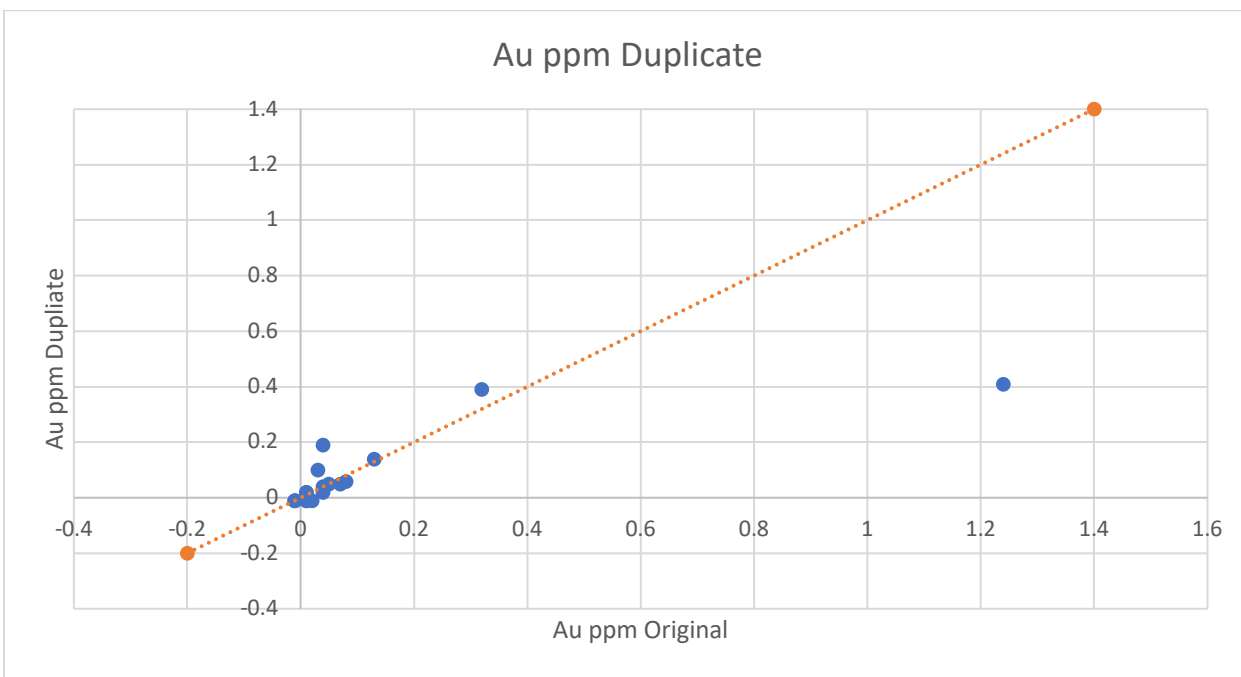
### **Analytical Quality Control Data and Relative Precision Charts**

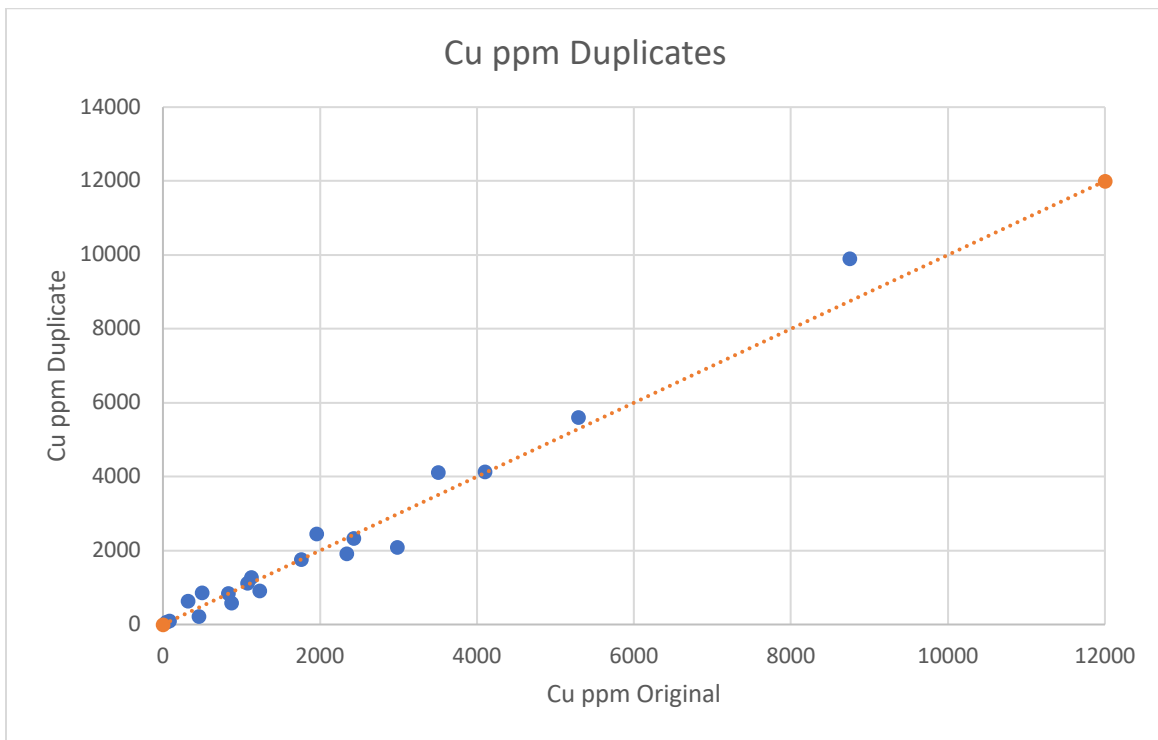












## **APPENDIX C**

### **Base Statistics and Variograms for Historical Resource Estimation**

These figures and diagrams have not been verified by KCL and are provided for information purposes only for review of the historic resource.

Statistic	Ag ppm	Au ppm	Co %	Cu %	Pb ppm	Zn ppm
Samples	1,767	1,767	1,767	1,767	1,767	1,767
Raw Mean	0.93	0.08	0.05	0.19	76.76	41.70
Raw CV	9.11	2.74	1.85	1.80	19.73	2.83
Top-cut	23.00	1.30	1.00	1.70	3,000	600
Number Top-cut	5	6	3	5	4	13
Top-cut Mean	0.69	0.07	0.05	0.19	26.86	37.36
Top-cut CV	2.80	2.02	1.73	1.35	6.36	1.96

*Composite Top Cuts*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	0.02	0.03	0.02	0.02
Maximum	9.80	8.00	21.90	23.00
Mean	0.66	0.59	0.65	0.76
Standard deviation	1.15	0.90	2.24	2.40
CV	1.75	1.52	3.44	3.14
Variance	1.32	0.81	5.01	5.77
Skewness	4.49	3.92	6.95	7.63
10%	0.05	0.10	0.10	0.10
20%	0.10	0.20	0.10	0.10
30%	0.10	0.25	0.10	0.11
40%	0.16	0.25	0.20	0.25
50%	0.25	0.25	0.25	0.25
60%	0.30	0.26	0.25	0.25
70%	0.53	0.46	0.25	0.31
80%	1.02	0.75	0.25	0.60
90%	1.80	1.40	0.90	1.50
95%	2.40	2.30	1.80	2.50
97.50%	3.50	3.40	3.70	4.20
99%	5.30	4.80	13.20	17.10

*Top Cut Statistics for 1m composites by domain for Ag*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	0.01	0.01	0.01	0.01
Maximum	1.30	1.02	0.91	1.30
Mean	0.10	0.05	0.05	0.08
Standard deviation	0.23	0.09	0.10	0.15
CV	2.35	1.59	1.79	1.84
Variance	0.05	0.01	0.01	0.02
Skewness	3.94	4.80	4.89	4.62
10%	0.01	0.01	0.01	0.01
20%	0.01	0.01	0.01	0.01
30%	0.01	0.01	0.01	0.01
40%	0.01	0.02	0.01	0.02
50%	0.01	0.02	0.02	0.03
60%	0.02	0.03	0.03	0.05
70%	0.05	0.05	0.05	0.07
80%	0.11	0.08	0.07	0.11
90%	0.26	0.14	0.14	0.19
95%	0.43	0.22	0.22	0.31
97.50%	0.97	0.29	0.26	0.43
99%	1.30	0.38	0.44	0.81

*Top Cut Statistics for 1m composites by domain for Au*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	0.00	0.00	0.00	0.00
Maximum	1.00	0.57	0.34	1.00
Mean	0.09	0.04	0.04	0.05
Standard deviation	0.15	0.07	0.05	0.08
CV	1.64	1.50	1.50	1.67
Variance	0.02	0.00	0.00	0.01
Skewness	3.86	4.15	3.15	5.53
10%	0.01	0.01	0.00	0.01
20%	0.01	0.01	0.01	0.01
30%	0.02	0.02	0.01	0.02
40%	0.02	0.02	0.01	0.02
50%	0.04	0.03	0.02	0.03
60%	0.06	0.03	0.02	0.03
70%	0.10	0.04	0.03	0.04
80%	0.12	0.05	0.05	0.06
90%	0.19	0.09	0.09	0.09



95%	0.30	0.16	0.15	0.15
97.50%	0.52	0.30	0.22	0.28
99%	0.95	0.38	0.27	0.50

*Top Cut Statistics for 1m composites by domain for Co*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	0.00	0.00	0.01	0.00
Maximum	1.70	1.34	1.00	1.70
Mean	0.29	0.19	0.13	0.16
Standard deviation	0.36	0.23	0.13	0.23
CV	1.26	1.23	1.03	1.39
Variance	0.13	0.05	0.02	0.05
Skewness	2.16	2.33	2.99	2.98
10%	0.04	0.01	0.03	0.01
20%	0.06	0.03	0.05	0.02
30%	0.08	0.05	0.06	0.04
40%	0.11	0.07	0.07	0.06
50%	0.14	0.10	0.09	0.08
60%	0.19	0.14	0.11	0.11
70%	0.27	0.20	0.14	0.16
80%	0.42	0.30	0.19	0.25
90%	0.79	0.47	0.24	0.43
95%	1.17	0.67	0.39	0.62
97.50%	1.39	0.93	0.59	0.81
99%	1.70	1.17	0.67	1.24

*Top Cut Statistics for 1m composites by domain for Cu*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	1.00	1.00	1.00	1.00
Maximum	2,020	84.60	68.00	3,000
Mean	57.87	6.70	8.82	31.44
Standard deviation	206.43	8.01	8.80	215.40
CV	3.57	1.20	1.00	6.85
Variance	42,613	64.00	78.00	46,396
Skewness	6.44	4.63	3.46	12.78
10%	4.00	1.00	3.00	2.00
20%	6.00	2.00	4.00	3.00
30%	7.40	3.00	4.00	4.00
40%	9.00	4.00	6.00	5.00
50%	11.00	5.00	6.00	7.00

60%	14.50	6.00	7.00	8.00
70%	20.00	7.00	9.00	11.00
80%	27.30	9.00	11.00	14.00
90%	59.60	13.00	18.00	25.00
95%	236.00	18.00	26.00	48.00
97.50%	481.00	28.50	32.00	102.00
99%	1,440	41.00	46.00	621.00

*Top Cut Statistics for 1m composites by domain for Pb*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	5.00	4.00	4.00	4.00
Maximum	600.00	251.00	420.00	600.00
Mean	77.18	22.40	31.37	33.33
Standard deviation	127.61	23.13	42.49	66.40
CV	1.65	1.03	1.35	1.99
Variance	16,284	535	1,805	4,408
Skewness	2.66	4.52	5.99	6.61
10%	9.00	8.00	10.00	10.00
20%	12.00	10.00	13.00	12.00
30%	16.00	12.00	14.00	14.00
40%	20.00	14.00	17.00	16.00
50%	26.00	16.00	21.00	18.00
60%	35.00	18.00	24.00	21.00
70%	47.00	22.00	28.00	26.00
80%	77.00	27.00	38.00	33.00
90%	250.00	41.00	65.00	52.00
95%	384.00	65.00	86.00	89.00
97.50%	476.00	90.00	115.00	132.00
99%	600.00	131.00	182.00	433.00

*Top Cut Statistics for 1m composites by domain for Zn*

Statistic	Domain 5	Domain 7	Domain 8	Domain 9
Samples	281	439	206	841
Minimum	0.02	0.02	0.02	0.03
Maximum	12.44	4.56	2.24	8.55
Mean	1.01	0.50	0.40	0.54
Standard deviation	1.63	0.59	0.41	0.68
CV	1.61	1.17	1.03	1.26
Variance	2.66	0.35	0.17	0.46
Skewness	4.17	3.05	2.28	4.40
10%	0.10	0.09	0.09	0.12

20%	0.17	0.13	0.13	0.18
30%	0.23	0.18	0.17	0.22
40%	0.31	0.24	0.21	0.26
50%	0.41	0.32	0.25	0.31
60%	0.69	0.39	0.30	0.39
70%	1.02	0.54	0.41	0.51
80%	1.45	0.72	0.58	0.71
90%	2.35	1.09	0.92	1.16
95%	3.29	1.61	1.32	1.77
97.50%	5.37	2.30	1.70	2.43
99%	10.56	3.22	2.07	3.36

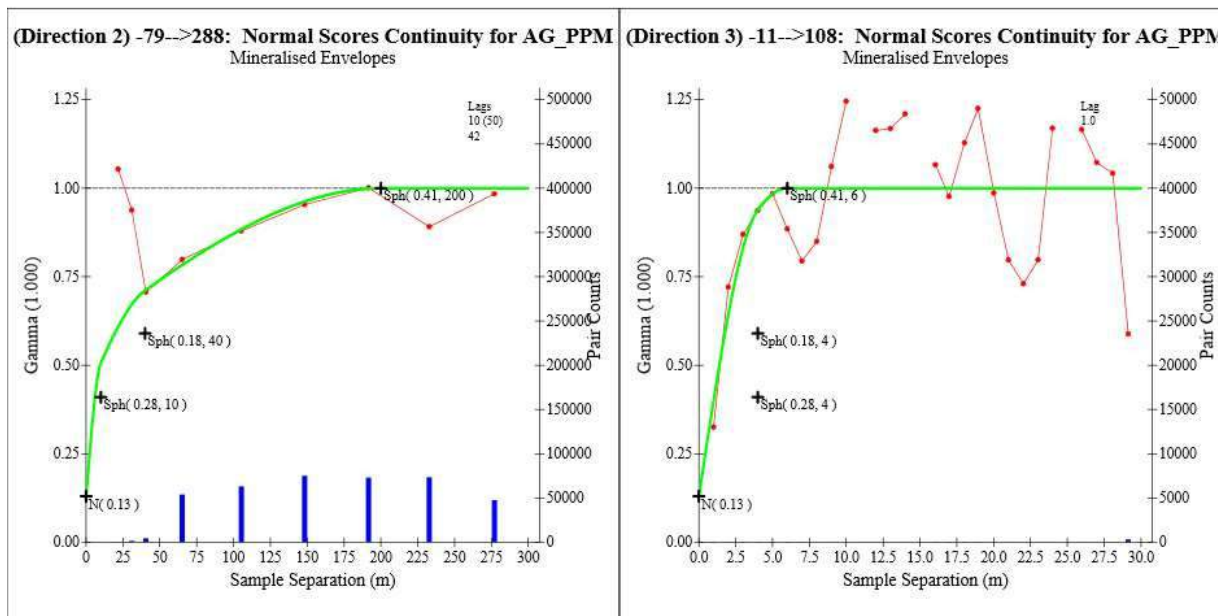
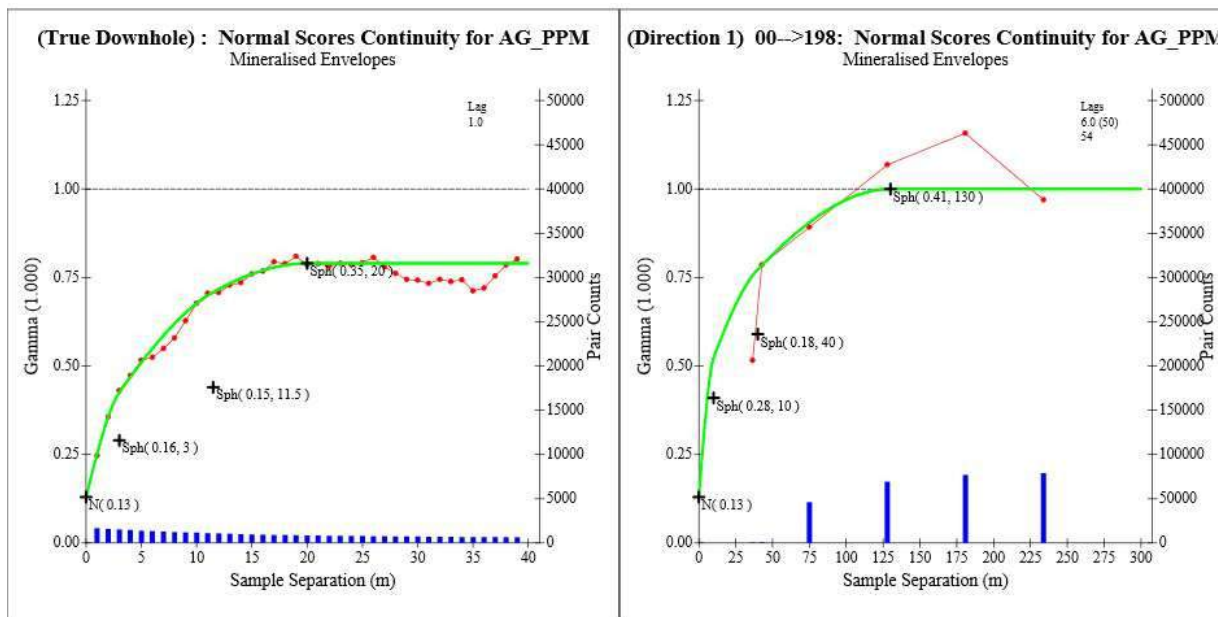
*Top Cut Statistics for 1m composites by domain for CuEq*

Variable		Direction	Co	Structure 1		Structure 2		Structure 3	
				C <sub>1</sub>	R <sub>1</sub>	C <sub>2</sub>	R <sub>2</sub>	C <sub>3</sub>	R <sub>3</sub>
Ag ppm	1	00°-->198°	0.43	0.43	10	0.10	40	0.04	130
	2	-79°-->288°			10		40		200
	3	-11°-->108°			4		4		6
Au ppm	1	00°-->198°	0.27	0.42	10	0.21	35	0.10	160
	2	-79°-->288°			10		34.5		200
	3	-11°-->108°			4		4		6
Co %	1	00°-->198°	0.16	0.37	20	0.26	65	0.21	200
	2	-79°-->288°			20		65		200
	3	-11°-->108°			3		6		10
Cu %	1	00°-->198°	0.13	0.48	20	0.19	50	0.20	55
	2	-79°-->288°			10		35		40
	3	-11°-->108°			4		6		8
Pb ppm	1	00°-->198°	0.47	0.44	20	0.08	120	0.01	200
	2	-79°-->288°			10		25		140
	3	-11°-->108°			4		5		6
Zn ppm	1	00°-->198°	0.27	0.40	20	0.15	45	0.18	370
	2	-79°-->288°			20		35		300
	3	-11°-->108°			4		5		6

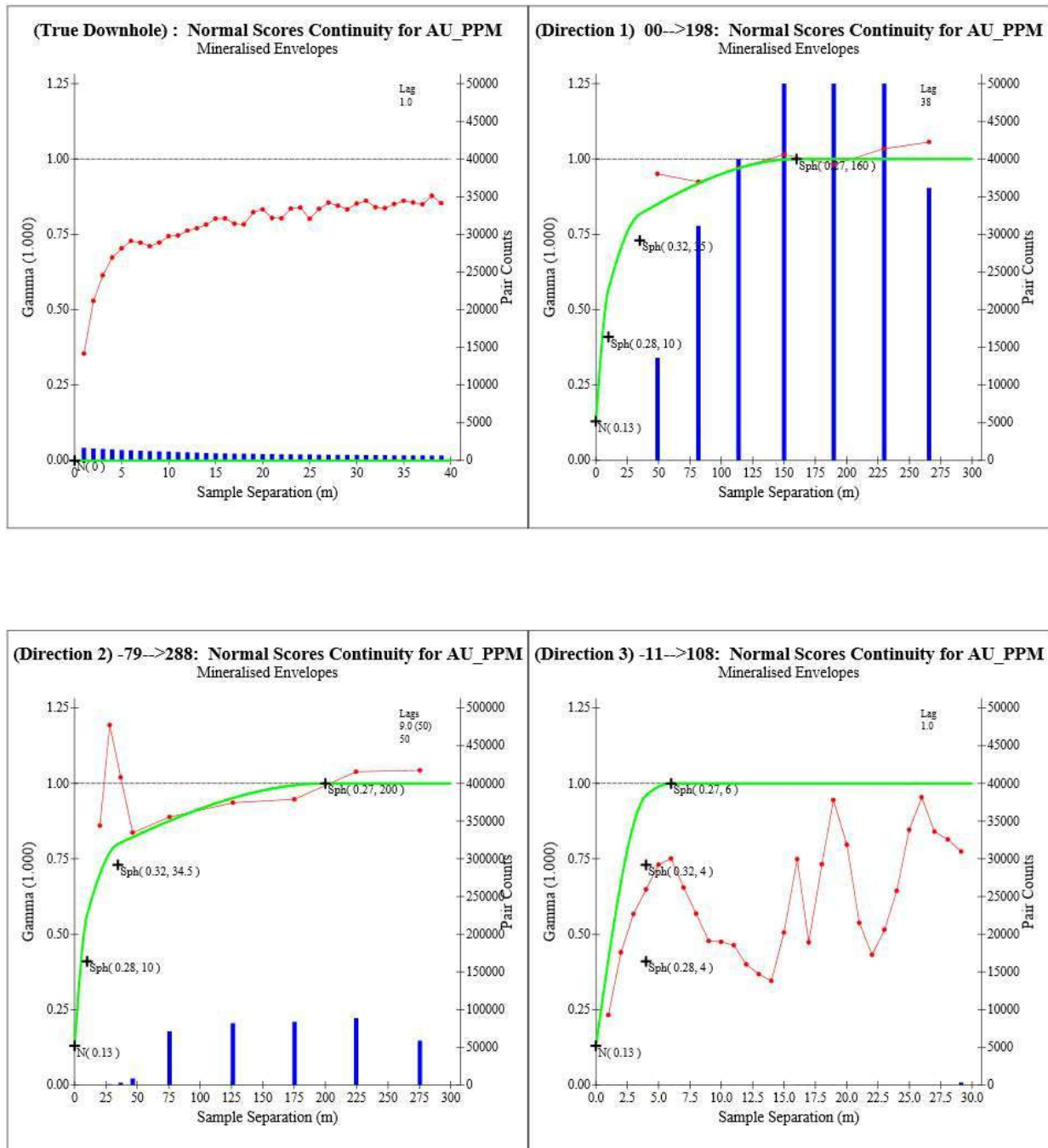
*Variogram Model Parameters- back transformed*

Estimation Pass	Search Distance			Composites	
	Dir 1	Dir 2	Dir 3	Min	Max
1	100	100	20	5	15
2	200	200	40	5	15
3	500	500	100	1	15

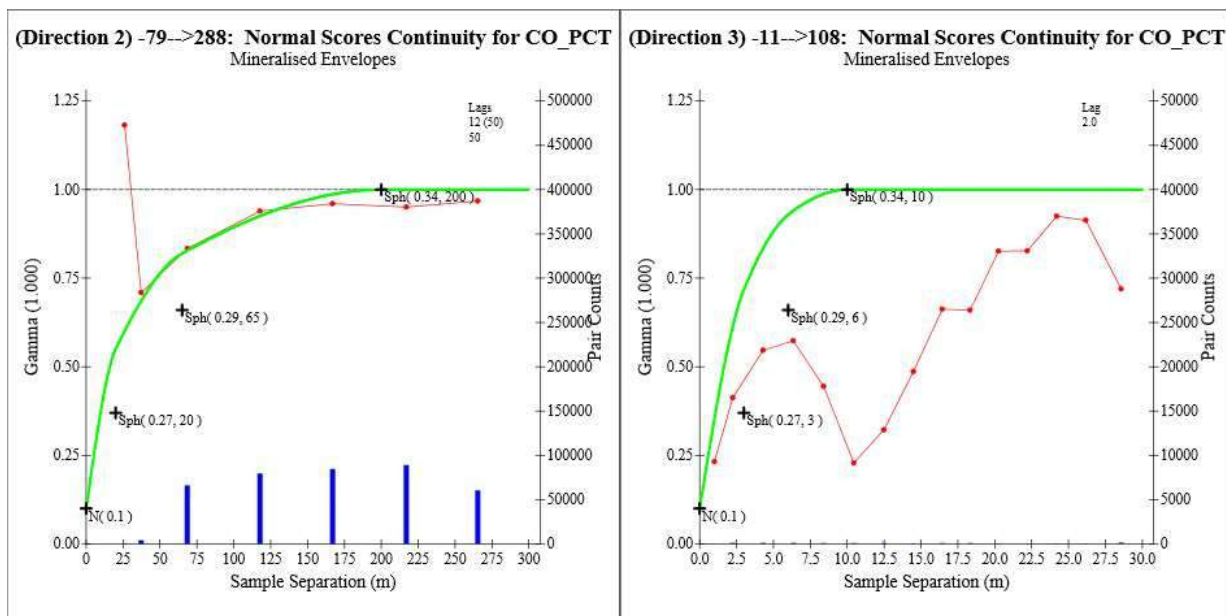
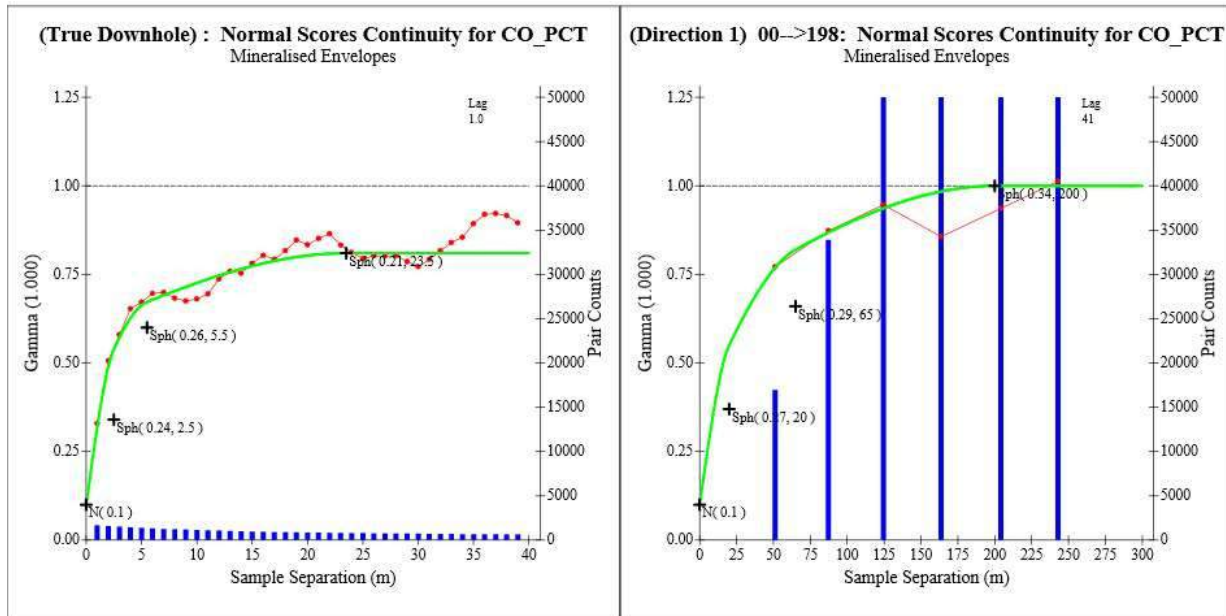
*Kriging Parameters*



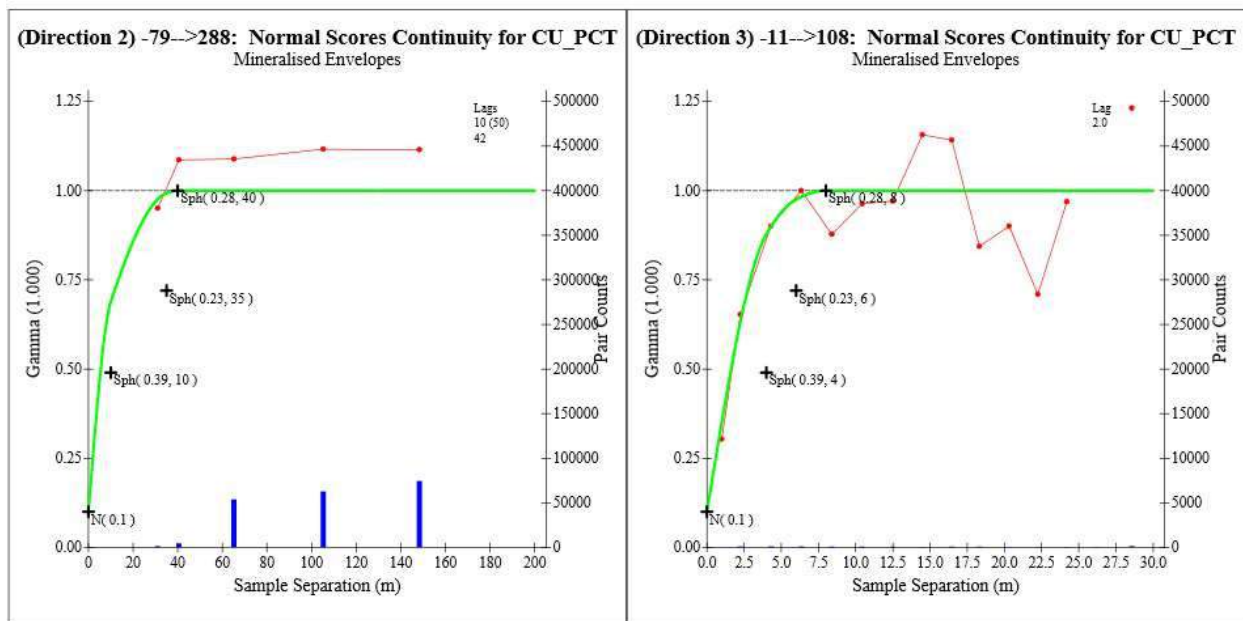
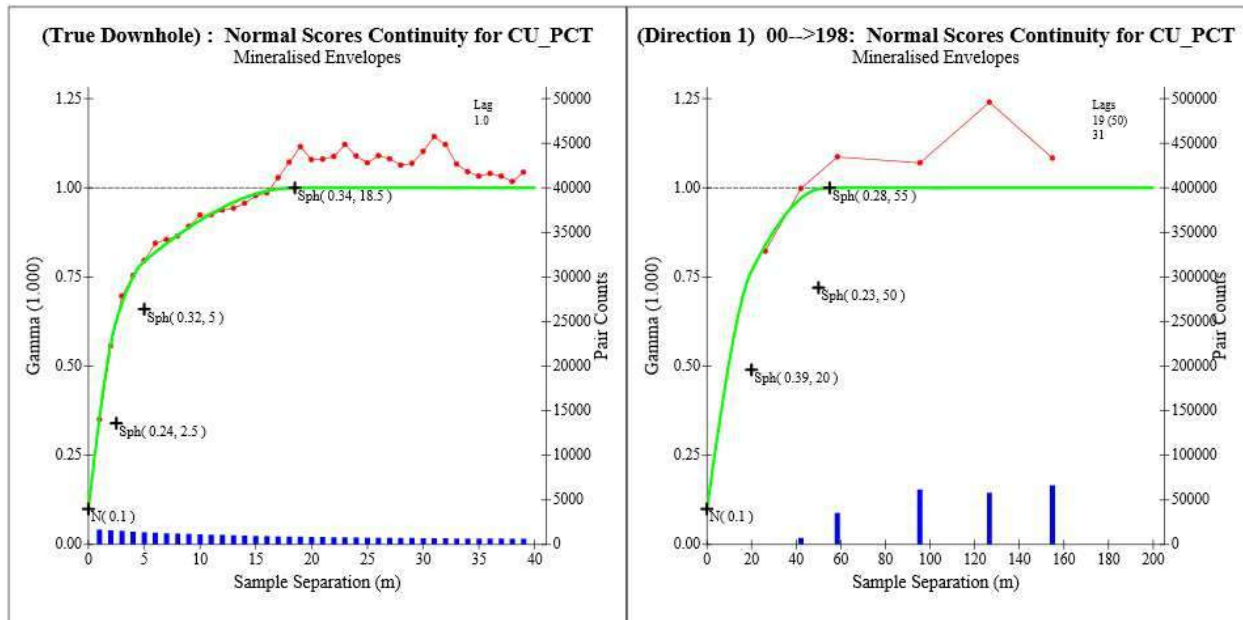
Ag Variogram models for mineralised domains – Normal Scores



Au Variogram models for mineralised domains – Normal Scores

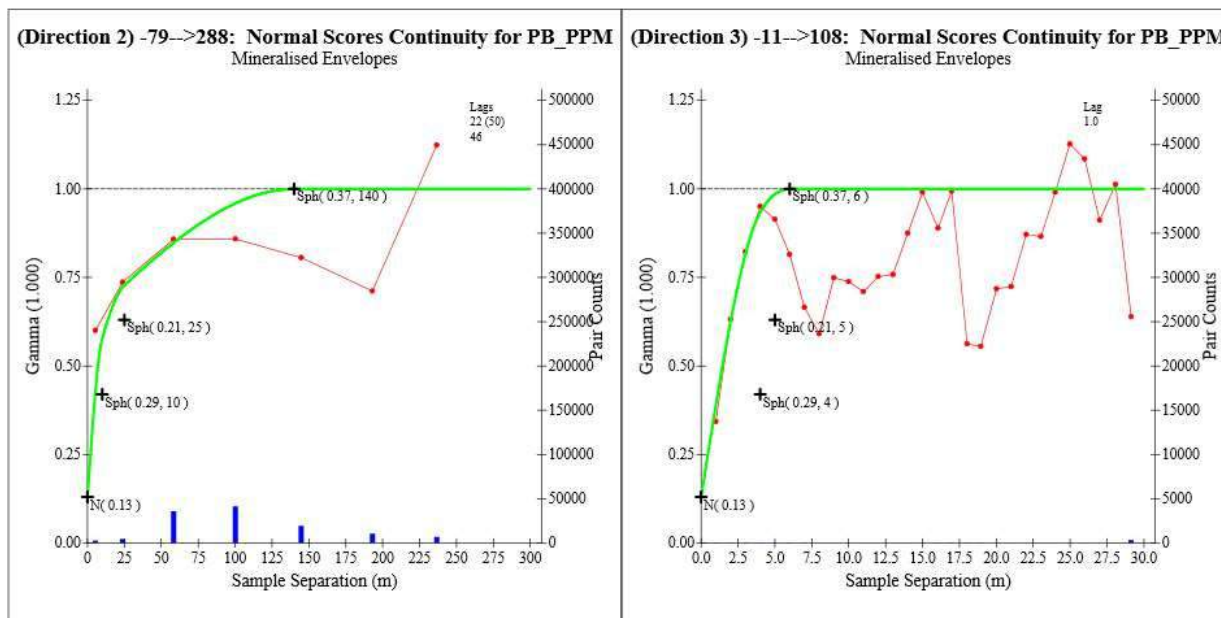
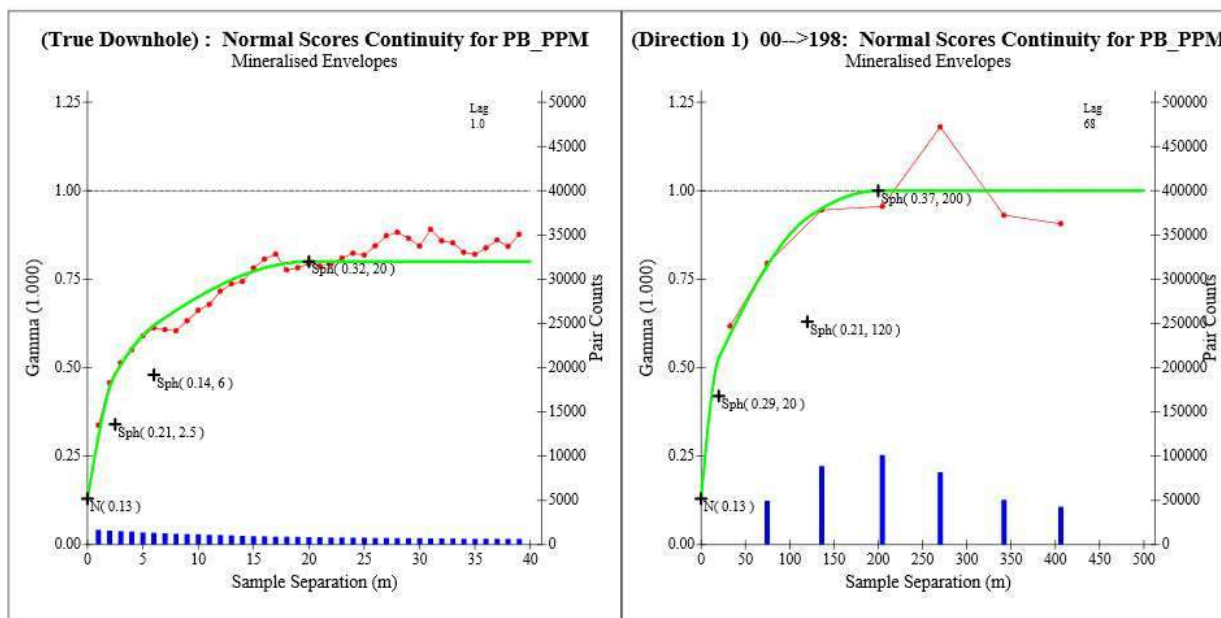


Co Variogram models for mineralised domains – Normal Scores



*Cu Variogram models for mineralised domains – Normal Scores*



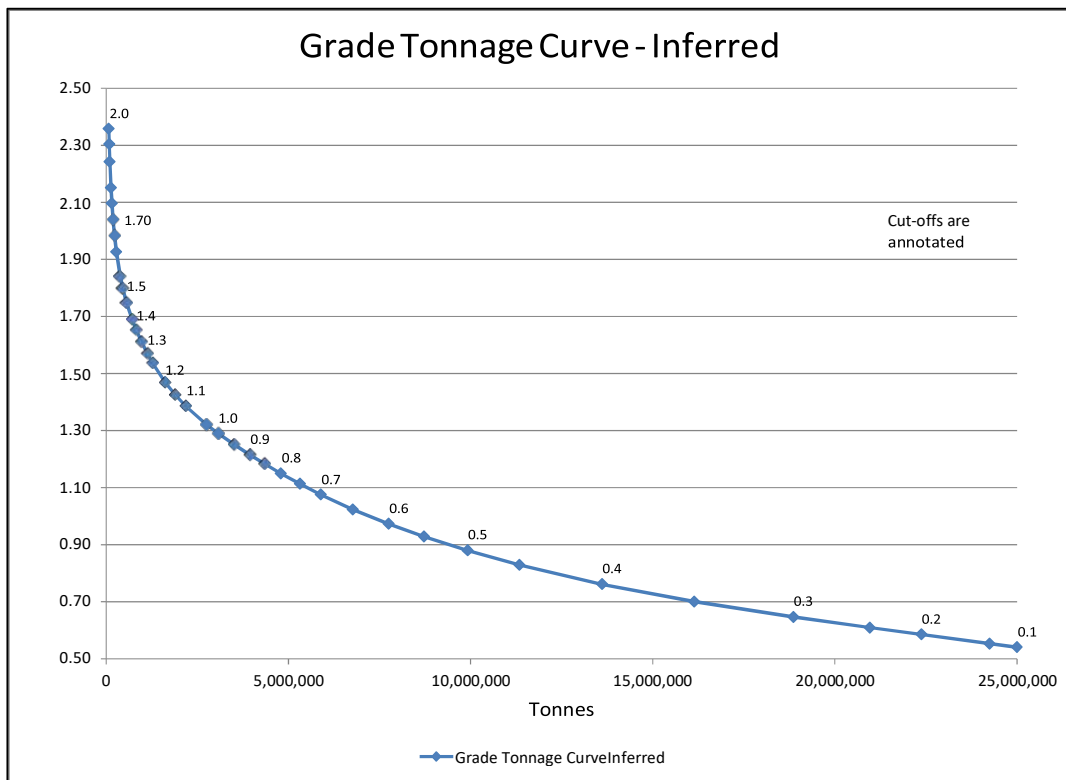


*Pb Variogram models for mineralised domains – Normal Scores*

Cut Off	Tonnes	CuEq (%)	Cu (%)	Co (%)	Au (ppm)	Ag (ppm)	Pb (ppm)	Zn (ppm)
2.00	69,645	2.36	0.61	0.26	0.26	0.94	8.61	27.10
1.95	81,076	2.30	0.60	0.25	0.24	1.08	8.13	27.40

1.90	96,697	2.24	0.61	0.24	0.24	1.12	8.27	26.90
1.85	127,863	2.15	0.58	0.23	0.22	1.30	7.59	27.10
1.80	153,533	2.10	0.58	0.22	0.21	1.48	7.40	26.90
1.75	186,575	2.04	0.56	0.22	0.20	1.51	7.50	27.10
1.70	226,208	1.98	0.54	0.21	0.19	1.54	8.66	27.30
1.65	277,597	1.93	0.51	0.21	0.18	1.48	8.44	26.70
1.60	385,014	1.84	0.46	0.21	0.16	1.37	9.32	25.40
1.55	453,784	1.80	0.44	0.20	0.15	1.32	9.87	26.90
1.50	552,198	1.75	0.41	0.20	0.14	1.22	9.68	26.00
1.45	711,006	1.69	0.38	0.20	0.14	1.14	10.26	26.90
1.40	823,465	1.65	0.38	0.19	0.14	1.08	10.61	26.90
1.35	966,349	1.61	0.37	0.19	0.13	1.06	10.88	27.00
1.30	1,121,694	1.57	0.36	0.18	0.13	1.01	11.00	27.10
1.25	1,263,001	1.54	0.35	0.18	0.13	0.97	10.72	26.70
1.20	1,621,027	1.47	0.36	0.17	0.12	0.89	11.83	29.10
1.15	1,897,710	1.42	0.36	0.16	0.12	0.87	11.97	28.70
1.10	2,177,663	1.39	0.36	0.15	0.12	0.87	12.07	28.50
1.05	2,766,739	1.32	0.36	0.14	0.12	0.85	13.07	29.70
1.00	3,071,412	1.29	0.35	0.14	0.12	0.84	13.11	29.90
0.95	3,521,182	1.25	0.35	0.13	0.12	0.81	13.27	30.60
0.90	3,946,248	1.21	0.34	0.13	0.11	0.80	13.48	30.50
0.85	4,335,616	1.18	0.34	0.12	0.11	0.79	13.42	30.60
0.80	4,795,549	1.15	0.34	0.12	0.11	0.78	13.74	30.70
0.75	5,315,466	1.11	0.33	0.11	0.11	0.78	13.64	30.50
0.70	5,889,037	1.08	0.32	0.11	0.11	0.78	13.43	30.50
0.65	6,769,065	1.02	0.31	0.10	0.11	0.77	15.09	30.40
0.60	7,747,746	0.97	0.31	0.10	0.11	0.84	22.97	31.00
0.55	8,725,104	0.93	0.30	0.09	0.10	0.85	25.39	31.30
0.50	9,921,848	0.88	0.28	0.08	0.10	0.88	26.91	31.60
0.45	11,343,351	0.83	0.27	0.08	0.10	0.91	26.80	31.50
0.40	13,610,189	0.76	0.25	0.07	0.09	0.87	26.10	31.50
0.35	16,138,495	0.70	0.23	0.07	0.08	0.82	24.36	31.10
0.30	18,856,968	0.65	0.21	0.06	0.08	0.78	22.60	30.60
0.25	20,963,724	0.61	0.20	0.06	0.07	0.77	21.49	30.30
0.20	22,379,076	0.59	0.19	0.05	0.07	0.76	21.27	31.00
0.15	24,248,316	0.55	0.19	0.05	0.07	0.75	21.01	31.70
0.10	24,998,174	0.54	0.18	0.05	0.06	0.74	22.66	33.60
0.05	25,420,655	0.53	0.18	0.05	0.06	0.73	22.50	33.70
0.00	25,547,821	0.53	0.18	0.05	0.06	0.73	22.41	33.70

*Millennium November 2016 Estimate Grade Tonnage Report - Inferred*



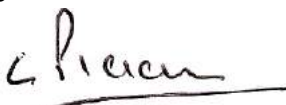
*Millennium November 2016 Estimate Grade Tonnage Curve – Inferred*

## CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **NI43-101 Technical Report – Millennium Co-Cu-Au Deposit, Mt. Isa, Australia, January 18, 2019.**

I, Christopher Picken, residing at 19 Dewey Court, St Marks Square, Bromley, BR2 9UZ, United Kingdom do hereby certify that:

- 1) I am a Senior Consultant – Exploration with the firm of Kangari Consulting Limited with an office at 10 St Michaels Close, Lawhitton, Launceston, Cornwall PL15 9NF, United Kingdom;
- 2) I am a graduate of the University of Manchester in 1985, I obtained a Bachelor of Science (Honors) in Geology/Geography. I have practiced my profession as an exploration geologist continuously since 1985. During my career I have worked on exploration projects in South Africa, Venezuela, Bolivia, Ecuador, Brazil, Tanzania, Uganda, Liberia, Sierra Leone and Cote d'Ivoire. I have been involved in exploration and technical reviews of copper gold and base metal projects for Gold Fields Ltd in several South American countries including Bolivia. Advanced projects include the 2-million-ounce resource at the Yaoure Gold Project in Cote d'Ivoire;
- 3) I am a professional geologist registered with the Institute of Materials, Minerals and Mining (Professional Membership No 464056) and a member of the Australian Institute of Mining and Metallurgy since 2007 (Membership No. 228999).
- 4) I have personally visited the Millennium Project between 16 and 18 January 2019;
- 5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfil the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a Qualified Person, I am independent of the issuer (Global Energy Metals Corporation) and vendor (Hammer Metals Limited) as defined in Section 1.5 of National Instrument 43-101;
- 7) I am the principal-author of this report and responsible for 1 & 6 through 12 and 14 through 27 and accept professional responsibility for those sections of this technical report;
- 8) I have had no prior involvement with the subject property.
- 9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) Kangari Consulting Limited was retained by Global Energy Metals Corporation to prepare a technical audit of the Millennium Co-Cu-Au Project. In conducting our audit, a gap analysis of project technical data was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of project files and discussions with Global Energy Metals Corporation personnel;
- 11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Millennium Co-Cu-Au Project or securities of Global Energy Metals Corporation; and
- 12) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.



London, UK  
February 14, 2019

Christopher Picken AusIMM  
Senior Consultant – Exploration


## CERTIFICATE OF QUALIFIED PERSON

To Accompany the report entitled: **NI43-101 Technical Report – Millennium Co-Cu-Au Deposit, Mt. Isa, Australia, January 18, 2019.**

I, Timothy Strong BSc (Hons) ACSM FGS MIMMM RSci, residing at 1 Clifton Garden Cottages, Clifton Gardens, Saint Christopher and Nevis, do hereby certify that:

- 1) I am a Principal Geologist with the firm of Kangari Consulting Limited with an office at 10 St Michaels Close, Lawhitton, Launceston, Cornwall PL15 9NF, United Kingdom;
- 2) I am a graduate of the University of Exeter in 2009, I obtained a Bachelor of Science (Honors) in Applied geology. I have practiced my profession continuously since 2009. I have worked as an exploration geologist and economic geologist for 10 years. During my career I have worked on projects from grassroots through to feasibility in Australia, Cote d'Ivoire, Eritrea, Ethiopia, Mali, Mauritania, Pakistan, Sierra Leone, Spain and Sudan. Projects have included the 8 million-ounce Syama Gold Project in Mali and the 2 million-ounce Yaoure Gold Project in Cote d'Ivoire.
- 3) I am a professional Geologist registered with the Institute of Materials, Minerals and Mining (MIMM 453602) and a Registered Scientist with the Science Council (RSci SC00027363)
- 4) I have not personally visited the project area but relied on a site visit conducted by Christopher Picken, a co-author of this technical report;
- 5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfil the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;
- 6) I, as a Qualified Person, I am independent of the issuer (Global Energy Metals Corporation) and vendor (Hammer Metals Limited) as defined in Section 1.5 of National Instrument 43-101;
- 7) I am the co-author of this report and responsible for sections 2 through 5 and section 13 and accept professional responsibility for those sections of this technical report;
- 8) I have had no prior involvement with the subject property.
- 9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;
- 10) Kangari Consulting Limited was retained by Global Energy Metals Corporation to prepare a technical audit of the Millennium Co-Cu-Au project. In conducting our audit, a gap analysis of project technical data was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and Canadian Securities Administrators National Instrument 43-101 guidelines. The preceding report is based on a site visit, a review of project files and discussions with Global Energy Metals Corporation personnel;
- 11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Millennium Co-Cu-Au Project or securities of Global Energy Metals Corporation; and
- 12) That, as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

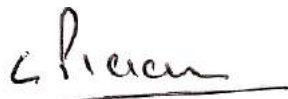
Charlestown, Nevis, W.I.  
February 14, 2019

  
Timothy J Strong MIMMM  
Principal Geologist

To: Securities Regulatory Authority, BC Securities Commission and Alberta Securities Commission.

I, Christopher Picken, do hereby consent to the public filing of technical report entitled NI43-101 Technical Report – Millennium Co-Cu-Au Deposit, Mt. Isa, Australia, and dated January 18, 2019 (the "Technical Report") by Global Energy Metals Corporation (the "Issuer"), with the TSX Venture Exchange under its applicable policies and forms in connection with the acquisition of the Millennium cobalt project from Hammer Metals Limited as per the press release dated November 29, 2018, to be entered into by the Issuer and I acknowledge that the Technical Report will become part of the Issuer's public record.

London, UK  
February 14,  
2019




Christopher Picken AusIMM  
Senior Consultant – Exploration

To: Securities Regulatory Authority, BC Securities Commission and Alberta Securities Commission.

I, Timothy Strong, do hereby consent to the public filing of technical report entitled NI43-101 Technical Report – Millennium Co-Cu-Au Deposit, Mt. Isa, Australia, and dated January 18, 2019 (the "Technical Report") by Global Energy Metals Corporation (the "Issuer"), with the TSX Venture Exchange under its applicable policies and forms in connection with the acquisition of the Millennium cobalt project from Hammer Metals Limited as per the press release dated November 29, 2018, to be entered into by the Issuer and I acknowledge that the Technical Report will become part of the Issuer's public record.

Charlestown,  
Nevis, W.I.  
February 14,  
2019

  
Timothy J Strong MIMMM  
Principal Geologist