

# KALAHARI COPPER BELT MINERAL RESOURCES AND ORE RESERVES UPDATE

## Highlights

- > Kalahari Copper Belt Mineral Resources of 175.5 Mt @ 1.3% Cu and 15 g/t Ag
- > Boseto Copper Operation Mineral Resources of 100.6 Mt @ 1.4% Cu and 15 g/t Ag
- > Boseto Copper Operation Ore Reserves of 15.3 Mt @ 1.3% Cu and 19 g/t Ag

## Boseto Mineral Resources and Ore Reserves Estimates Updated

Discovery Metals Limited (**Discovery Metals** or **Company**) reports updated Mineral Resources and Ore Reserves estimates for all of its deposits in the Kalahari Copper Belt.

The independent consultants, QG Australia Pty Ltd, Xstract Mining Consultants Pty Ltd and Runge Pincock Minarco Limited, completed these estimates of Mineral Resources and Ore Reserves in accordance with the principles of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 Edition (**JORC 2012**).

Discovery Metals' CEO, Mr Bob Fulker, commented, "*This work represents an update of the Mineral Resources and Ore Reserves in the Kalahari Copper Belt, incorporating additional drilling and sampling information gathered in the last 12 months, as well as production reconciliation data.*"

*Our resource development program has enabled the replacement of Open Pit Mineral Resources and Ore Reserves depleted by mining over the last twelve month. The Zeta Underground Ore Reserves remain effectively unchanged from the feasibility study providing confidence in our strategy to transition the Boseto Operation to a predominantly underground mining operation."*

The Zeta, Plutus and Zeta NE deposits are located adjacent to the Boseto Copper Concentrator (Figures 1 and 2) in north-western Botswana.

The Selene, Ophion, NE Mango 1 and NE Mango 2 deposits are located outside the Boseto mining licence but within the Company's prospecting licences in north-western Botswana in the Kalahari Copper Belt, and within potential trucking distance to the Boseto Copper Concentrator. A current application has been lodged to enlarge the current Boseto mining licence to include these deposits.

## Kalahari Copper Belt Mineral Resources

The Kalahari Copper Belt Mineral Resources are shown in the table below. Accompanying this release is summarised technical information and complete JORC 2012 Table 1 commentary for all Mineral Resources estimates.

All tonnage and grade figures have been rounded down to two or three significant figures, respectively; slight errors may occur due to rounding of values.

Mineral Resources	2014 Estimate			2013 Estimate <sup>2</sup>		
	Mt	Cu (%)	Ag (g/t)	Mt	Cu (%)	Ag (g/t)
Plutus <sup>1</sup>	81.7	1.31	13	82.1	1.34	12
Zeta <sup>1</sup>	18.9	1.54	25	18.8	1.54	24
<b>Total Boseto Copper Operation</b>	<b>100.6</b>	<b>1.35</b>	<b>15</b>	<b>100.9</b>	<b>1.38</b>	<b>14</b>
Zeta North East <sup>1</sup>	11.6	1.48	28	12.9	1.30	22
Selene <sup>3</sup>	16.0	1.0	16	16.0	1.0	16
Ophion <sup>3</sup>	14.0	1.0	12	14.0	1.0	12
NE Mango 1 <sup>3</sup>	4.8	1.2	13	4.8	1.2	13
NE Mango 2 <sup>3</sup>	28.5	1.3	14	28.5	1.3	14
<b>TOTAL KALAHARI COPPER BELT MINERAL RESOURCES <sup>4</sup></b>	<b>175.5</b>	<b>1.3</b>	<b>15</b>	<b>177.1</b>	<b>1.3</b>	<b>15</b>

<sup>1</sup> Mineral Resources are reported as of 30 June 2014 and exclude all mining depletion to that date. The 2014 Plutus, Zeta and Zeta NE Open Pit Mineral Resources are reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; Underground Mineral Resources are reported above a cut-off grade of 1.08% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.008546 \times Ag(g/t)$ , and a 4m minimum mining width. 2014 Plutus, Zeta and Zeta NE Open Pit Mineral Resources are constrained within a pit optimisation run at 1.5 times the Ore Reserves commodity price. Underground Mineral Resources are constrained within the limits of geological interpretation.

<sup>2</sup> Previous Open Pit Mineral Resources for Plutus and Zeta are reported as at 31 May 2013 and use the same cut-off grades and pit shell constraints adopted for 2014 estimates. Underground Mineral Resources are reported above a cut-off grade of 1.07% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.0113 \times Ag(g/t)$ , and a 5m minimum mining width. Previous Mineral Resources estimate for all other Mineral Resources listed are as of 31 May 2013 at a cut-off grade of 0.6% Cu and excludes oxide material.

<sup>3</sup> 2014 Mineral Resources estimates are reported as of 31 May 2013 at a cut-off grade of 0.6% Cu and exclude oxide material.

<sup>4</sup> Please refer to Competent Persons Statements. The Mineral Resources reported here include any Ore Reserves declared for these Deposits.

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## Plutus Mineral Resources

Plutus Mineral Resources	2014 Estimate <sup>1</sup>			2013 Estimate <sup>2</sup>		
	Mt	Cu (%)	Ag (g/t)	Mt	Cu (%)	Ag (g/t)
Measured	5.0	1.25	11	6.5	1.27	12
Indicated	12.9	1.30	13	12.0	1.30	13
Total Measured & Indicated	17.9	1.29	13	18.5	1.29	13
Inferred	63.8	1.31	14	63.6	1.36	12
<b>TOTAL MINERAL RESOURCES <sup>3</sup></b>	<b>81.7</b>	<b>1.31</b>	<b>13</b>	<b>82.1</b>	<b>1.34</b>	<b>12</b>

<sup>1</sup> 2014 Plutus Mineral Resources are reported as at 30 June 2014 and exclude all mining depletion to that date. Open Pit Mineral Resources are reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; Underground Mineral Resources are reported above a cut-off grade of 1.08% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.008546 \times Ag(g/t)$ , and a 4m minimum mining width. Open Pit Mineral Resources are constrained within an optimised pit shell run at 1.5 times the Ore Reserves commodity price. Underground Mineral Resources are constrained within the limits of geological interpretation and are reported outside of this pit shell.

<sup>2</sup> Previous Open Pit Mineral Resources are reported as at 31 May 2013 and exclude all mining depletion to that date. Open Pit Resources use the same cut-off grades and pit shell constraints adopted for 2014 estimates; Underground Mineral Resources are reported above a cut-off grade of 1.07% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.0113 \times Ag(g/t)$ , and a 5m minimum mining width, constrained within the limits of geological interpretation and extending to 500m below surface.

<sup>3</sup> Please refer to Competent Persons Statement. The Mineral Resources reported here include any Ore Reserves declared for this Deposit.

Copper-silver mineralisation at the Plutus Deposit remains open along strike and down dip.

In addition to the Mineral Resource estimates declared above, an Exploration Target of 6 to 19 Mt at 1.1% to 1.5% Cu and 10 g/t to 15 g/t Ag is declared for Plutus, and is based on existing drill hole data and very high geological continuity both along strike and down dip of the declared Mineral Resources. It must be noted that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to estimate a Mineral Resource in the area of the declared Exploration Target and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Please refer to the attached "2014 Plutus Mineral Resource and Exploration Target Statements" document which includes summarised technical information and complete JORC 2012 Table 1 commentary.

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## Zeta Mineral Resources

Zeta Mineral Resources	2014 Estimate <sup>1</sup>			2013 Estimate <sup>2</sup>		
	Mt	Cu (%)	Ag (g/t)	Mt	Cu (%)	Ag (g/t)
Measured	2.3	1.28	22	3.1	1.35	22
Indicated	7.7	1.35	25	7.2	1.40	25
Total Measured & Indicated	10.0	1.33	24	10.3	1.38	24
Inferred	8.9	1.78	26	8.5	1.73	25
<b>TOTAL MINERAL RESOURCES <sup>3</sup></b>	<b>18.9</b>	<b>1.54</b>	<b>25</b>	<b>18.8</b>	<b>1.54</b>	<b>24</b>

<sup>1</sup> 2014 Zeta Mineral Resources are reported as at 30 June 2014 and exclude all mining depletion to that date. Open Pit Mineral Resources are reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; Underground Mineral Resources are reported above a cut-off grade of 1.08% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.008546 \times Ag(g/t)$ , and a 4m minimum mining width. Open Pit Mineral Resources are constrained within an optimised pit shell run at 1.5 times the Ore Reserves commodity price. Underground Mineral Resources are constrained within the limits of geological interpretation, are exclusive of Open Pit Mineral Resources and extend to 800m below surface.

<sup>2</sup> 2013 Zeta Mineral Resources are reported as at 31 May 2013 and exclude material mined to that date. Open Pit Mineral Resources use the same cut-off grades and pit shell constraints adopted for 2014 estimates; Underground Mineral Resources reported above a cut-off grade of 1.07% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.0113 \times Ag(g/t)$ , and a 5m minimum mining width, constrained within the limits of geological interpretation and extending to 800m below surface.

<sup>3</sup> Please refer to Competent Persons Statement. The Mineral Resources reported here include any Ore Reserves declared for this Deposit.

The Zeta Deposit remains open along strike and down dip.

An Exploration Target mineralised with copper and silver, containing between 7 and 15 Mt at 1.1% to 1.5% Cu and 20 g/t to 25 g/t Ag, remains outside of the stated Mineral Resources and is based on existing drill hole data and very high geological continuity both along strike and down dip of the declared Mineral Resources. The potential quantity and grade of Exploration Targets is conceptual in nature, there has been insufficient exploration conducted to complete a Mineral Resource, and it is uncertain if further exploration will result in the estimate of a Mineral Resource.

Please refer to the attached "2014 Zeta Mineral Resource and Exploration Target Statements" document which includes summarised technical information and complete JORC 2012 Table 1 commentary.

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## Zeta North East (Zeta NE) Mineral Resources

Zeta NE Mineral Resources	2014 Estimate <sup>1</sup>			2013 Estimate <sup>2</sup>		
	Mt	Cu (%)	Ag (g/t)	Mt	Cu (%)	Ag (g/t)
Measured	-	-	-	-	-	-
Indicated	2.0	1.50	22	-	-	-
Total Measured & Indicated	2.0	1.50	22	-	-	-
Inferred	9.6	1.47	29	12.9	1.30	22
<b>TOTAL MINERAL RESOURCES <sup>3</sup></b>	<b>11.6</b>	<b>1.48</b>	<b>28</b>	<b>12.9</b>	<b>1.30</b>	<b>22</b>

<sup>1</sup> 2014 Zeta NE Mineral Resources are reported as at 30 June 2014 and exclude all mining depletion to that date. Open Pit Mineral Resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground Mineral Resources reported above a cut-off grade of 1.08% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.008546 \times Ag(g/t)$ , and a 4m minimum mining width. Open Pit Mineral Resources are constrained within an optimised pit shell run at 1.5 times the Ore Reserves commodity price. Underground Mineral Resources are constrained within the limits of geological interpretation and are reported outside of this pit shell.

<sup>2</sup> 2013 Zeta Mineral Resources are reported as at 31 May 2013 at a cut-off grade of 0.6% Cu, and are exclusive of interpreted oxide material.

<sup>3</sup> Please refer to Competent Persons Statement. The Mineral Resources reported here include any Ore Reserves declared for this Deposit.

The Zeta NE Deposit remains open along strike and down dip.

A significant drilling program for Zeta North East (Zeta NE) has resulted in portions of the previously classified Inferred Mineral Resource being upgraded to Indicated Mineral Resource. Improved delineation of Zeta NE and subsequent modelling supported by geostatistical analysis of the updated drill hole database has resulted in a decrease in overall tonnage, and in increase in both copper and silver grades.

Please refer to the attached "2014 Zeta North East Mineral Resource and Exploration Target Statements" document which includes summarised technical information and complete JORC 2012 Table 1 commentary.

## Additional Kalahari Copper Belt Mineral Resources

No new data has been incorporated into the Inferred Mineral Resources estimates in the table below; therefore there are no changes to the Mineral Resources estimates previously announced on 22 July 2013. Note that Zeta NE was previously included in this list.

Additional Kalahari Copper Belt Inferred Mineral Resources <sup>1</sup>			
Prospect	Mt	Cu (%)	Ag (g/t)
Selene <sup>2</sup>	16.0	1.0	16
Ophion <sup>3</sup>	14.0	1.0	12
NE Mango 1 <sup>4</sup>	4.8	1.2	13
NE Mango 2 <sup>5</sup>	28.5	1.3	14
<b>TOTAL MINERAL RESOURCES</b>	<b>63.3</b>	<b>1.2</b>	<b>14</b>

<sup>1</sup> Mineral Resources reported as at 31 May 2013, at a cut-off grade of 0.6% Cu, and are exclusive of interpreted oxide material.

<sup>2</sup> Drill hole data as at 12 January 2012.

<sup>3</sup> Drill hole data as at 11 October 2012.

<sup>4</sup> Drill hole data as at 1 August 2012.

<sup>5</sup> Drill hole data as at 16 October 2012.

## Boseto Copper Operation Ore Reserves

Ore Reserves estimates make use of the updated Mineral Resources estimates and include updated cost, revenue, metallurgical recovery, mining dilution and ore loss assumptions; mining and processing assumptions are based on actual performance and include the results from production reconciliations.

The Ore Reserves at the Boseto Copper Operation, as at 30 June 2014 and reported in accordance with JORC 2012 are:

### Boseto Ore Reserves

Ore Reserves		2014 Estimate <sup>1</sup>			2013 Estimate <sup>2</sup>		
Open Pit		Mt	Cu (%)	Ag (g/t)	Mt	Cu (%)	Ag (g/t)
Plutus	Proved	3.7	1.2	11	4.8	1.2	11
	Probable	3.0	1.3	14	1.2	1.4	16
	<b>Sub-total</b>	<b>6.6</b>	<b>1.2</b>	<b>12</b>	<b>6.0</b>	<b>1.2</b>	<b>12</b>
Zeta	Proved	1.2	1.2	20	1.7	1.3	20
	Probable	0.1	1.2	23	0.1	1.2	17
	<b>Sub-total</b>	<b>1.3</b>	<b>1.2</b>	<b>20</b>	<b>1.8</b>	<b>1.3</b>	<b>20</b>
<b>Total Open Pit Ore Reserves</b>		<b>8.0</b>	<b>1.2</b>	<b>14</b>	<b>7.7</b>	<b>1.2</b>	<b>14</b>

Underground <sup>3</sup>		Mt	Cu (%)	Ag (g/t)	Mt	Cu (%)	Ag (g/t)
Zeta	Proved	0.9	1.2	22	0.9	1.2	21
	Probable	6.4	1.3	24	6.4	1.3	23
<b>Total Underground Ore Reserves</b>		<b>7.3</b>	<b>1.3</b>	<b>24</b>	<b>7.3</b>	<b>1.3</b>	<b>23</b>

Total Proved	5.8	1.2	14	7.4	1.2	14
Total Probable	9.5	1.3	21	7.7	1.3	22
<b>TOTAL ORE RESERVES <sup>4</sup></b>	<b>15.3</b>	<b>1.3</b>	<b>19</b>	<b>15.0</b>	<b>1.3</b>	<b>18</b>

<sup>1</sup> 2014 Boseto Ore Reserves are reported as at 30 June 2014 and exclude material mined to that date. The cut-off grade used for the Open Pit Ore reserves varies depending on the metallurgical recovery which itself is dependent on the ratio of acid soluble copper (AsCu%) to total copper (TCu%); the higher the ratio of AsCu% to TCu%, the lower the metallurgical recovery. The resulting average cut-off grade (insitu) is generally in the range of 0.5 to 0.6 % Cu.

<sup>2</sup> 2013 Boseto Ore Reserves are reported as at 31 May 2013 and exclude all material mined to that date. Due to the relationship between the metallurgical copper recovery and the block S:Cu ratio, no traditional cut-off grade was applicable for the 2013 Open Pit Ore Reserves. The determination of ore was made by calculating the cash flow that would be produced by processing material and the cash flow which would be produced by mining it as waste. If the cash flow from processing was higher, the material was considered as ore; if not, it was considered waste.

<sup>3</sup> The economic cut-off grade used to determine the 2014 Zeta Underground Ore Reserves is 1.08% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.008546 \times Ag\ (g/t)$ , and a 4m minimum mining width; 2013 Zeta Underground Ore Reserves used a cut-off grade of 1.07% Cu equivalent (CuEq%), where  $CuEq\% = Cu\% + 0.0113 \times Ag\ (g/t)$ , and a 5m minimum mining width.

<sup>4</sup> Please refer to Competent Persons Statement.

Accompanying this release is summarised technical information and complete JORC 2012 Table 1 commentary for all Ore Reserves estimates. All tonnage and grade figures have been rounded to two or three significant figures, respectively; slight errors may occur due to rounding of values.



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Total Ore Reserves are effectively unchanged from those reported previously, with the main difference being a decrease in the proportion of Proved Ore Reserves in the total Ore Reserves.

The continuation of grade control drilling at Plutus has resulted in additional data being included into the Mineral Resource and Ore Reserves estimation process and this has resulted in an increase in the tonnage of the Plutus Probable Open Pit Ore Reserves, with Proved Ore Reserves depleted in line with mining of the Ore Reserves. The pit design extends into lower grade portions of the deposit following a review against the economic parameters, reducing the copper and silver grades for the Probable Ore Reserve. The net impact on the overall Plutus Ore Reserve compared to the previous estimate is negligible.

The Zeta Underground Ore Reserves are effectively unchanged from those reported previously.

### Impacts on Boseto Copper Operation Mining Plan

The overall Open Pit mining sequence for the next two and a half years remains unchanged with mining continuing at the Zeta and Plutus Open Pits, with an Underground Mine proposed for Zeta. Further development of the Inferred Mineral Resources in the Kalahari Copper Belt into Measured and Indicated categories requires additional drilling which is planned to be progressed.

## COMPETENT PERSONS STATEMENT

The information in this announcement that relates to Additional Kalahari Copper Belt Mineral Resources (Selene, Ophion, NE Mango 1 and NE Mango 2) is based on information compiled by Mr Matthew Readford, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Readford is a full time employee of Xstract Mining Consultants Pty Ltd, and has no interest in, and is entirely independent of, Discovery Metals Limited. Mr Readford has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in JORC 2012.

The information in this report that relates to the and Plutus, Zeta and Zeta North East Mineral Resources and Exploration Targets is based on information compiled by Mr Michael Stewart, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Stewart is a full time employee of QG Australia Pty Ltd, and has no interest in, and is entirely independent of, Discovery Metals Limited. Mr Stewart has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in JORC 2012.

The information in this report that relates to the Plutus Open Pit, Zeta Open Pit and Zeta Underground Ore Reserves is based on information compiled by Mr Joe McDiarmid, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM(CP)). Mr McDiarmid is a full time employee of Runge Pincock Minarco Limited, and has no interest in, and is entirely independent of, Discovery Metals Limited. Mr McDiarmid has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in JORC 2012. Mr McDiarmid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Messrs Readford, Stewart and McDiarmid consent to the inclusion in this report of the matters based on information provided by them and in the form and context in which it appears.

Further information on the Company including Mineral Resources and Ore Reserves is available on its website: [www.discoverymetals.com](http://www.discoverymetals.com)

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## FORWARD LOOKING STATEMENTS

This release includes certain statements that may be deemed “forward-looking statements”. All statements in this discussion, other than statements of historical facts, that address future activities and events or developments that Discovery Metals expects, are forward-looking statements. Although Discovery Metals believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include market prices, continued availability of capital and financing, and general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance and that actual results or developments may differ materially from those projected in forward-looking statements.

## DISCOVERY METALS BACKGROUND

Discovery Metals is an ASX/BSE listed copper exploration and production company focused on the emerging Kalahari Copper Belt in north-west Botswana. The Company is a copper producer at its 100% owned Boseto Copper Operation.

The Kalahari Copper Belt sediment-hosted mineralisation of the Boseto Copper Operation is similar in style to the well-known and large deposits of the Central African Copper Belt of Zambia and the Democratic Republic of the Congo.

Discovery Metals has prospecting licences covering approximately 26,150 km<sup>2</sup> in Botswana.

**Further information on the Company including Mineral Resources and Ore Reserves is available on our website:**  
**[www.discoverymetals.com](http://www.discoverymetals.com)**

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**For further information on this release and Discovery Metals Limited, please contact:**

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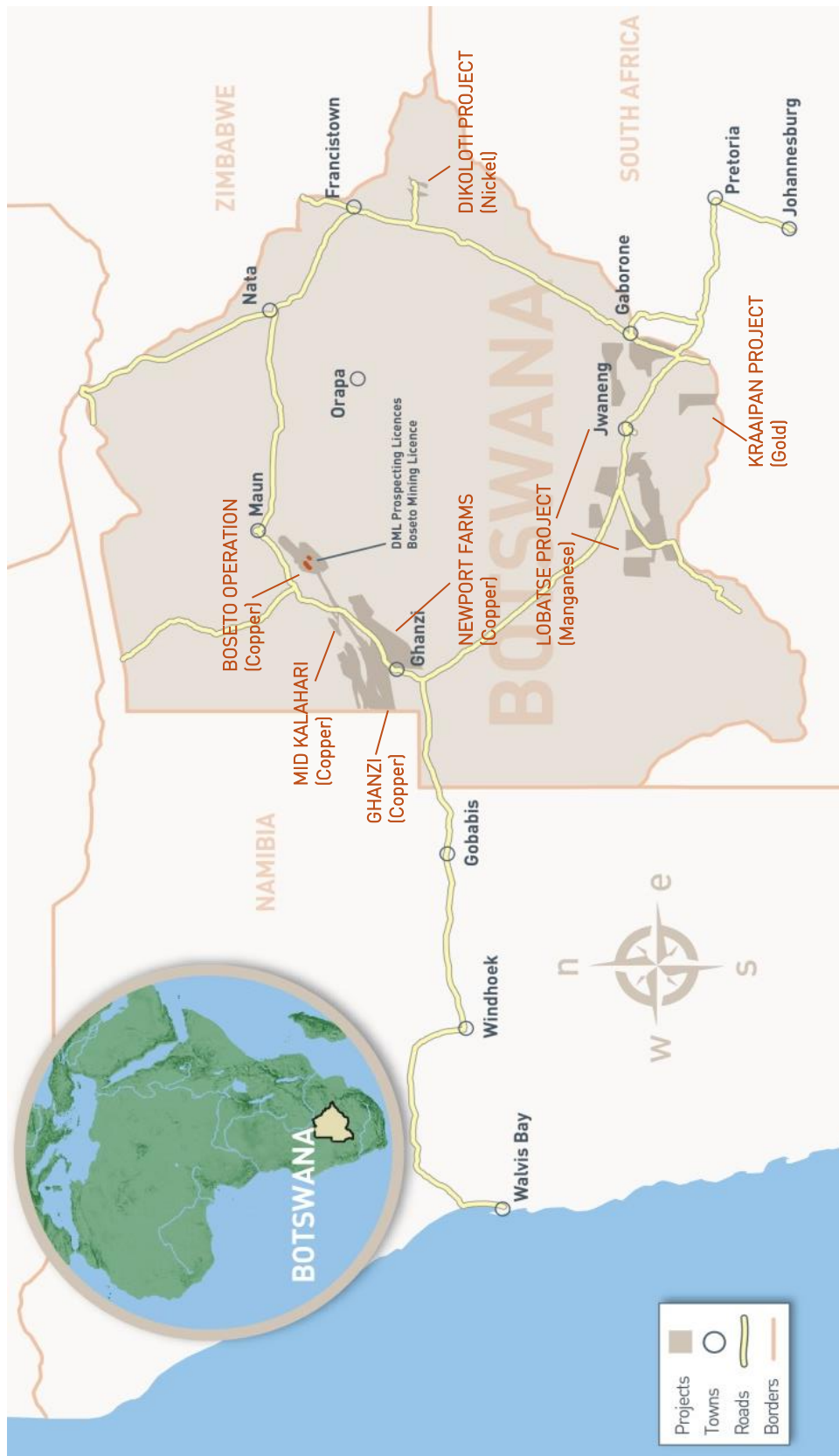


Figure 1. Discovery Metals' Botswana Projects

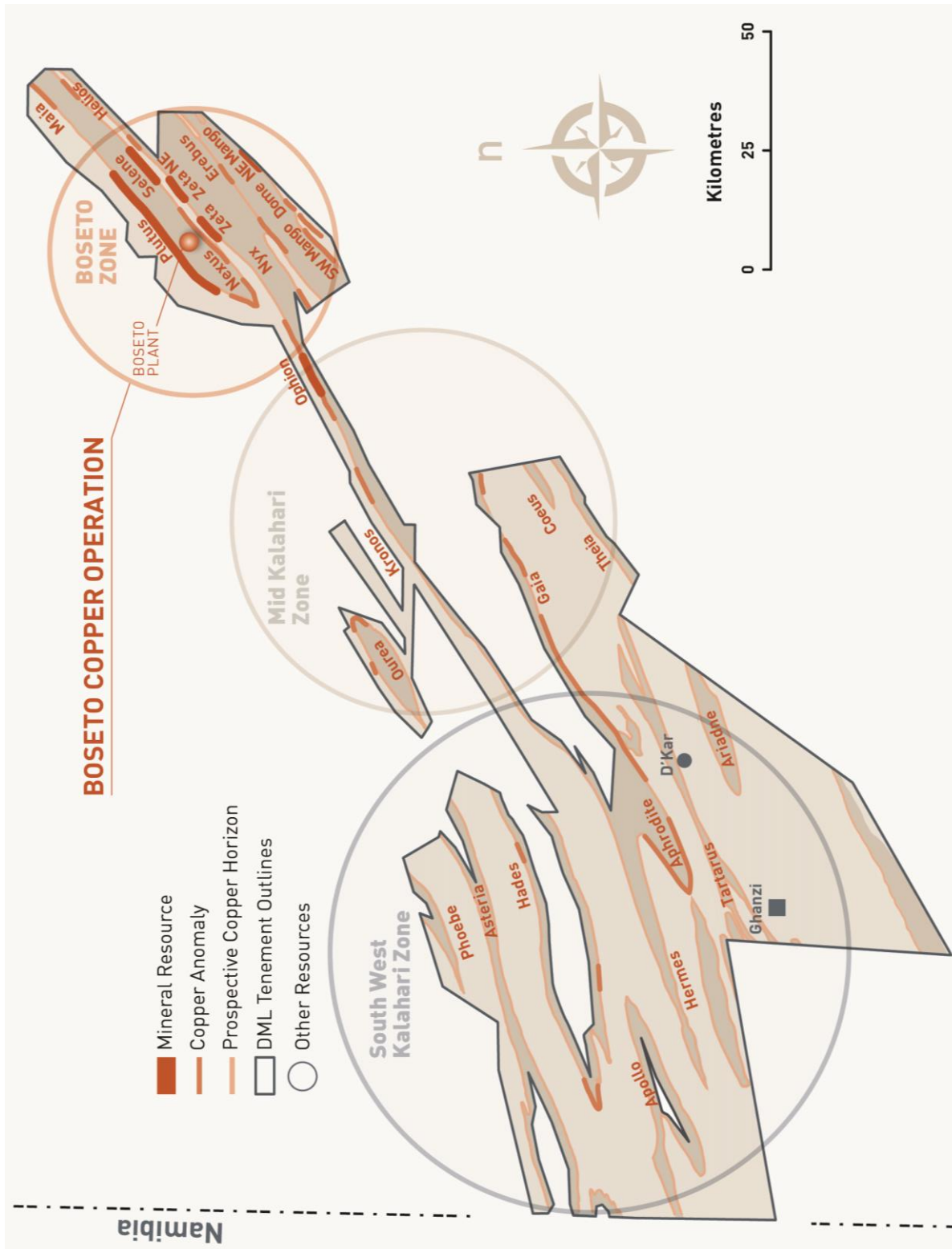


Figure 2. Exploration Zones



## Memorandum

**To:** Rob Cooper  
**From:** Mike Stewart

**Date:** 12 September 2014  
**Subject:** 2014 Plutus Mineral Resource and Exploration Target statements

Dear Rob

This document presents Mineral Resource and Exploration Target statements for the Plutus deposit, Botswana as at 30<sup>th</sup> June 2014.

Yours faithfully,

**Mike Stewart**  
Senior Principal Consultant

FROM  
COMPLEXITY  
TO  
CLARITY.

## 1. Plutus Mineral Resources Statement

QG Australian Pty Ltd (QG) have provided Discovery Metals Limited (DML) with an updated resource model for the Plutus Deposit. The estimate is based on updated geological interpretations that incorporate Reverse Circulation (RC) grade control drill holes drilled since July 2013 and knowledge gained during the mining of the deposit to date.

The Plutus copper deposit, a sediment hosted stratiform copper deposit, is one of a number of deposits which together form the Boseto Operation. It is located about 80km southwest of the town of Maun, Botswana. Mining production from Boseto commenced in early 2012 and processing began in June of that year. Mining of the Plutus pit commenced in January 2013.

A total of 1658 drill holes (609 diamond core, 5 resource RC, 15 short air core holes and 1034 RC grade control drill holes) have been used to define the Mineral Resource. QG reviewed the quality of drill data (location, sampling and assay quality) and conclude that the data is of acceptable quality for use in Mineral Resource estimation. Wireframe solid model interpretations of mineralisation using thresholds of ~0.3% and 1.5% copper were updated. Surfaces defining the base of complete oxidation and the top of fresh rock were also defined. Ordinary kriging was used to estimate copper, silver, sulphur, acid soluble copper, acetic acid soluble copper and density into blocks constrained within the wireframe models. Hard boundaries were applied to estimation within mineralisation domains, and the oxide/transition boundary was also treated as hard for all variables except copper. Top cuts were applied to some variables as required.

The model has been classified according to the JORC Code (2012).

QG's estimate of Mineral Resources for the Plutus deposit as at 30<sup>th</sup> June 2014 is summarised in Table 1. A summary of the material aspects of the 2014 Mineral Resource estimate in the context of the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves', using the format of 'Table 1 Checklist of Assessment and Reporting Criteria' is appended.



Category	Mt	Cu (%)	Ag(ppm)
Measured	5.0	1.25	11
Indicated	12.9	1.30	13
<b>Subtotal Measured &amp; Indicated</b>	<b>17.9</b>	<b>1.29</b>	<b>13</b>
Inferred	63.8	1.31	14
<b>Total Mineral Resource</b>	<b>81.7</b>	<b>1.31</b>	<b>13</b>

Table 1: Plutus Mineral Resource Estimate as at 30<sup>th</sup> June 2014.

*Notes: Mineral Resource estimates include: Open Pit Mineral Resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground Mineral Resources reported above a cut-off grade of 1.08% Cu equivalent ( $CuEq = Cu + Ag \times 0.008546$ ) and a 4m minimum mining width. Open pit Mineral Resources are constrained within a pit optimisation shell run at 1.5 times the Ore Reserve commodity price, while underground Mineral Resources are constrained outside this shell, and within the limits of geological interpretation. Mineral Resource estimates are inclusive of such open pit and underground Ore Reserves as may be declared. All tonnage and grade figures have been rounded down to two or three significant figures, respectively; slight errors may occur due to rounding of values.*

## 2. Plutus Exploration Target

In addition to the Mineral Resource estimates declared above, an Exploration Target of 6-19Mt at 1.2-1.3 % Cu is declared for Plutus. It must be noted that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to estimate a Mineral Resource in the area of the declared Exploration Target and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Exploration Target	Mt	Cu%	Ag%
Plutus exploration target	6-19	1.2-1.3	10-15

Table 2. Plutus exploration target

Drilling at Plutus confirms the presence of mineralisation within the same stratigraphic horizon over a strike length of nearly 30km. Depth continuity has been confirmed down to ~450m below surfaces over a strike length of 13km, by holes at 600-900m spacing. There is a strong geological likelihood that the mineralisation hosting horizon will continue to a depth of 600m below surface along the whole strike length. Some 16km of the known strike length has not been tested below around 100m.

To date, the drilling has not identified any consistently elevated core of grade, suitable for differentiating, wire-framing and estimating separately. However, a significant area/volume of the interpreted structure meets cut off criteria of >1.08%CuEq and > 5m width.

It is considered highly likely that further mineralisation that meets the underground cut-off criteria demonstrated for Zeta deposit will be present beneath the areas of shallow surface testing. The target tonnage defined is based on the presence of 2 to 4 shoots with the potential dimensions and grade tabulated below. The grade and width were derived from the average of the drill hole intercepts occurring within the well tested portions of Plutus – between 5.5 and 7.5m true width and 1.2-1.3% Cu. This area is shown as a solid red box on the

top long section shown in Figure 1. The dashed red boxes show the assumed dimensions of the exploration targets, to illustrate the size of these with respect to existing drilling. The location of these boxes is not meant to imply the location of mineralisation, but to illustrate the size of target sought

	Low case	High case	Units
Number of shoots	2	4	
Size of mineralised 'shoot'	800	1200	m strike
	250	250	m depth
Thickness	5.5	7.5	m
Density	2.8	2.8	t/m <sup>3</sup>
Tonnage per shoot	3,080,000	4,620,000	t
Total Tonnage	6,160,000	18,900,000	t
Average Grade	1.2%	1.3%	%

Table 3. Basis of calculation of Exploration Target tonnage and grade



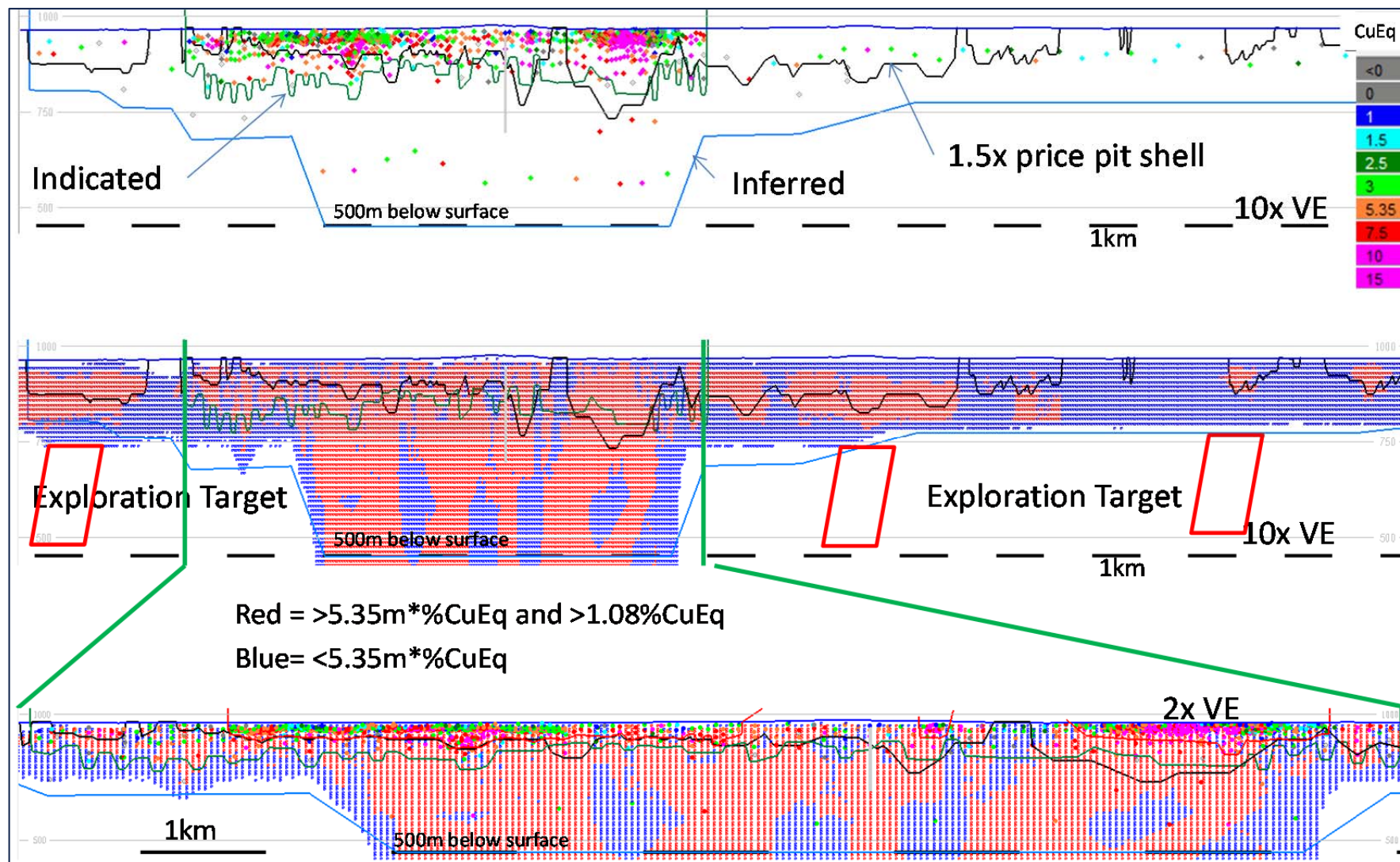


Figure 1. Long section view showing exploration target areas in relation to existing drilling and resource boundaries

### 3. Competent Persons Statements

The information in this announcement that relates to Mineral Resources and Exploration Targets for Discovery Metals Limited's Plutus Deposit in Botswana is based on information compiled by Michael Stewart, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (Membership No. 209311) and the Australian Institute of Geoscientists (Membership No. 3119). Michael Stewart is a full time employee of QG Australia Pty Ltd, and has no interest in, and is entirely independent of, Discovery Metals Limited. Michael Stewart has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Michael Stewart consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

FROM  
COMPLEXITY  
TO  
CLARITY.

# JORC Code, 2012 Edition – Table 1

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>No surface sampling techniques are used in Mineral Resource estimates.</li> <li>Diamond core is ½ core sampled after cutting. Samples are crushed and pulverised to produce the aliquots required for analysis.</li> <li>RC samples (1m length) are reduced to 3kg at the drill rig using a cone splitter. This is further reduced at the laboratory to 800g before pulverisation in a mixer mill to yield a bagged pulp sample, from which a number of aliquots are extracted for different analytical processes.</li> <li>A small number of air core holes are also included, but these do not influence estimates of grade within mineralised zones.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>The majority of earlier drilling was by diamond coring, with only a small number of RC holes (4 of 570).</li> <li>RC grade control commenced in June 2012, and at the time of estimation a total of 1034 angled RC holes had been completed. These average 32.8m in length, with the longest being 112m.</li> <li>RC grade control infill coverage of the Plutus pit areas is patchy. The original pattern was drilled from surface prior to commencement of mining, and provided regular coverage of 25m along strike and ~10m vertical.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Core recovery within Plutus diamond drilling averages 86%. No discernible relationship exists between core recovery and either sample length or Cu grade.</li> <li>No systematic recording of RC sample recovery has been undertaken. Sample recovery observed at the rig was generally adequate, although was somewhat lower than optimal. The RC grade control rig in use was not fitted with dust suppression, and loss of fines is higher than desirable.</li> <li>A detailed examination was made of RC versus Diamond core sampling to investigate the possibility of sampling biases in RC drilling. No evidence of any systematic difference in RC intercept grades or intercept thickness was identified in this deposit, or any of the Boseto deposits.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>All drill holes have been geologically logged. Logging is focused on identification of underlying stratigraphic units. Specific logging of mineralisation is not undertaken. While logging provides a guide to subsequent interpretation of mineralisation it is not of adequate resolution for defining estimation domains, and these rely on grades of Cu, Ag and S.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>Diamond drill core is sawn longitudinally and half core samples submitted for analysis. All subsequent sample preparation was undertaken at commercial laboratory facilities in Johannesburg and Perth using industry standard crushing and pulverising equipment and protocols. QG have not directly reviewed pulp duplicate data reported by the laboratory, but scatter plots presented in earlier reports indicate that these data are of suitable precision for use in Mineral Resource estimates.</li> <li>RC grade control drill samples are initially split at the rig using a cone splitter. Samples are prepared and analysed at the onsite laboratory. Samples are crushed to 2mm, split to 800g using riffle splitter, pulverised to 90% passing 75µm.</li> <li>Field duplicate samples are collected at a ratio of 1:20. Laboratory duplicates are collected at the ratio of 1:25.</li> <li>Laboratory duplicates show a typically high level of precision with a coefficient of variation (CV) for Cu of 4% for samples greater than 10x level of detection.</li> <li>The precision of field duplicates is only moderately good for a base metal deposit (22% CV for Cu), and improvement should be investigated.</li> </ul>
<b>Quality of assay data</b>	<ul style="list-style-type: none"> <li>Information about the analytical methods and quality control measures applied to resource drilling up until mid-2012 is contained in previous Mineral Resource reports.</li> </ul>

Criteria	Commentary
<b>and laboratory tests</b>	<p>No significant issues were noted, and QG concur with the conclusion that data is of acceptable quality for use in resource estimates.</p> <ul style="list-style-type: none"> <li>• Analysis of RC grade control drilling is normally carried out at the onsite laboratory facility managed by Set Point Laboratories. From Sept 2013, approximately 50% of samples were assayed off site at the Set Point laboratory in Johannesburg.</li> <li>• In March 2014, DML terminated their contract with Set Point Laboratories, and appointed an alternative provider to manage and run the on-site laboratory. The majority of new data included in this estimate was assayed by Set Point on site, with a smaller quantity assayed at their lab in Johannesburg.</li> <li>• The following analytical methods are employed: <ul style="list-style-type: none"> <li>○ Cu and Ag - 3 acid digest with AAS finish;</li> <li>○ Acid Soluble Cu (CuAS) - sulphuric acid digest with AAS finish;</li> <li>○ S – LECO (CS-230)</li> <li>○ Acetic acid soluble Cu (CuAAA) – Acetic acid digest with AAS finish.</li> </ul> </li> <li>• DML insert commercial certified reference materials (CRM's) and blanks at a ratio of 1:20. Six main CRM's were submitted – three sourced from AMIS (African Minerals Standards), and three from OREAS.</li> <li>• Interpretation of the results of CRM's is hampered by a large number of mis-labelled samples. Once the most obvious errors have been filtered out or re-assigned, there does not appear to be any significant problem with analytical accuracy.</li> <li>• Analytical precision achieved by the on-site lab is poor, particularly for the AMIS CRM's. It is not clear whether this is the result of poor laboratory practice or poor homogeneity of the CRM's in use.</li> <li>• Only the acceptable level of accuracy and high density of grade control sampling make RC grade control data acceptable for use in Mineral Resource estimates. The poor quality of data collected during 2013/14 has been taken into account in classification. A large quantity of grade control drilling was added to the deposit in 2013/14, but no upgrade of classification was applied to blocks informed by the new drilling.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• As far as QG are aware, no verification by independent assaying has been undertaken. However, the analytical grades are consistent with the tenor of mineralisation observed which is confirmed by subsequent phases of drilling and production.</li> <li>• When the thickness and grade of RC drill intercepts are compared to diamond core intercepts within a common volume, no systematic differences are apparent.</li> <li>• The only adjustment to assay data is translation between units of % and ppm for copper.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• Drilling completed by DML has been located using DGPS. Down hole surveys are dominantly collected using electronic single shot instruments. Diamond holes are mostly surveyed at regular intervals downhole. RC holes generally only have an in rods dip survey near collar, but as holes are short and at a high angle to structure this is considered adequate.</li> <li>• Topographic survey data was obtained from LIDAR survey, and has an accuracy of +/- 0.6m. Post commencement of mining, surface pickups are made using DGPS.</li> <li>• The grid system used is WGS84, Zone 34K.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• Intercept spacing at Plutus is variable. The broadest regular spacing is some 600m along strike by 60m vertical, which is progressively in-filled to 100m by 30m with some areas to 50mx 30m. Grade control drilling intercepts are spaced at 25m along strike by approximately 10m vertical.</li> <li>• Geological continuity is very high. This is seen in a very consistent planar geometry of mineralisation over 10's of km, and is confirmed by exposure from open pit. Continuity of grades within the mineralised horizons is typically lower, which can be seen as fluctuations around a fairly consistent average grade.</li> <li>• Samples are composited to 1m prior to estimation.</li> </ul>



Criteria	Commentary
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>The vast majority of drilling crosses the mineralisation at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralisation.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The chain of custody applied to older diamond core sampling is not known. RC samples are collected in plastic bags, bar-coded, sealed using zip-lock fasteners and submitted in batches.</li> <li>Sample security is not considered a major issue given the nature of the mineralisation, and the status of the project as a producing owner operated mine.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>Previous inspections of RC sampling conducted by CS-2 Pty Ltd and Snowden recommended that the sampling equipment and protocols be reviewed, improved and documented. This recommendation remains in place.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>The Plutus deposit is located on Mining Lease No. 2010/99L, expiring on 19<sup>th</sup> December 2025.</li> <li>DML has 100% ownership of the lease and Boseto Copper Project as a whole.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencor International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>The Plutus deposit lies within the Ghanzi-Chobe Fold Belt (Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the Plutus deposit is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.</li> <li>Mineralisation is strongly associated with the development of shears within the altered mudstones of the lower D'Kar formation. These are generally most intensely developed adjacent to the rheologically competent Ngawako Pan sandstones in the footwall. Presence of other competent units has probably influenced the location of mineralisation above the base of the D'Kar formation.</li> <li>More detail is in Section 3 below.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A total of 1703 drill holes were used for the resource estimate. A drill hole listing is in the full Technical Report and accompanying database.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>Exploration Results are not being reported here – sample compositing for estimation was to 1m down hole lengths.</li> </ul>
<b>Relationship between mineralisation widths and intercept</b>	<ul style="list-style-type: none"> <li>The vast majority of drilling crosses the mineralisation at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralisation.</li> </ul>

Criteria	Commentary
<i>lengths</i>	
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• See Figure 1 above.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• Exploration Results are not being reported here. The Mineral Resource estimate itself is a weighted and balanced estimate of the contained mineralisation.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• This information (geological mapping, metallurgical testwork, bulk density data) is included in Section 3.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• The Exploration Targets identified in the vicinity of the Plutus Mineral Resource will be tested as part of future surface drilling and exploration programs, the timing of which will depend on the ranking compared to other targets and the priority assigned to these targets. These Targets are shown in Figure 1.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Commentary
<i>Database integrity</i>	<ul style="list-style-type: none"> <li>• Raw data is stored in an underlying acQuire database, established in October 2012. The acQuire database structure contains numerous internal consistency checks, as do the softwares into which drill-holes were imported (Minesight, Datamine, Surpac and Leapfrog).</li> <li>• Data was provided to QG in the form of separate collar, survey, assay and lithology files in ASCII CSV format. A number of iterations of data extraction were required due to inconsistency between extracted versions. QG made independent checks of the data extraction process by referring records back to the underlying AcQuire database.</li> <li>• Previous authors have performed checks from database back to original records. No further checking against raw data was carried out as part of this estimate.</li> <li>• QG note that the data base software chosen by DML is powerful but requires a high level of knowledge/proficiency to use effectively. It is essential that DML properly resource the management of this database in order to reduce the risk presented by inadvertent misuse. QG recommend that a thorough independent review of database integrity and management be undertaken as a matter of urgency.</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li>• Mike Stewart visited site between Tuesday 25 and Friday 29<sup>th</sup> September, 2012.</li> <li>• Inspections were made of the geology department, exploration core storage, grade control drilling operations, Zeta open pit mining area, Zeta low grade stockpiles and ROM stockpile area and the processing plant.</li> <li>• Discussions were held with senior site Geological, Mining, Processing, and Laboratory staff, and covered the following: <ul style="list-style-type: none"> <li>○ mine geology practices and reconciliation;</li> <li>○ data management and ore blocking</li> <li>○ visits to the RC grade control rig;</li> <li>○ a visit around the Set Point Laboratory facility.</li> <li>○ mining practices, blasting and mine planning;</li> <li>○ an overview and tour of the process plant;</li> </ul> </li> <li>• All staff were open, receptive and helpful during discussions.</li> <li>• No further site visit was made prior to this estimation. The geology of the deposit is</li> </ul>



Criteria	Commentary
	simple and well understood.
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>The general disposition of mineralisation is remarkable for its continuity and tabular planar geometry, being dominantly hosted in a single thin stratigraphic horizon continuous over many 10's of kilometers. Mineralisation is dominantly hosted with a narrow (&lt;40m) sheared and altered mudstone unit lying at the base of the reduced D'Kar sandstones/siltstones and overlying the Ngwako Pan Formation sandstones.</li> <li>At Plutus the hosting horizon gradually bends from a strike of 023 in the south, to 052 in the north. Dip varies from around 45-50 degrees NW in the south to around 65 degrees NW in the north.</li> <li>The footwall contact is reliably marked by a pronounced jump in Cu grades.</li> <li>The hanging wall contact of the main ore zone (which is continuous over the deposit) is also generally well-marked by a pronounced step in grade. A number of discrete sub-parallel zones of discontinuous mineralised zones occur in the hanging wall of the main mineralisation. QG used a threshold of ~0.3% Cu to define mineralised envelopes, also taking into consideration the thickness of mineralisation and consistency of geometry.</li> <li>Unlike at Zeta, an internal zone of higher Cu grades cannot be consistently defined.</li> <li>Analysis of grade behavior across defined boundaries provides strong support for the choice for thresholds used.</li> <li>The most difficult aspect of mineralisation to model is weathering. Surfaces have been defined for the base of complete oxidation (marked by absence of sulphides), and the top of fresh (marked by start of partial oxidation of sulphide species). Definition of these surfaces is complicated by both their high spatial variability, and by the position of drill intersections (adjacent sections intersect mineralisation at the same RL, providing poor vertical control on the position of sub-horizontal surfaces).</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The mineralised stratigraphic horizon at Plutus has been identified by drilling over a strike length of some 28km. Wireframe interpretations have been extended along this entire length. In the centre of the deposit, mineralisation has been identified to a depth of &gt;500m and is open at depth. On average the zone of Cu mineralisation is some 5.5m wide.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>Copper, silver, sulphur, acid soluble copper, acetic acid soluble copper and density were estimated using ordinary kriging into blocks of 5m East, by 25m North by 10m RL. These block dimensions were selected to match the existing grade control model definition. Sub-cells to a minimum dimension of 0.625m E by 6.25m N by 1.25m RL were used to represent volume. Estimates were performed in Surpac software, while exploratory data analysis was undertaken in Isatis software.</li> <li>The concentrations of two hydrated copper oxide mineral species (malachite and chrysocolla) were also estimated; malachite is estimated from an acetic acid Cu (CuAAA) assay, on the assumption that all/only Cu soluble in acetic acid is due to malachite, while chrysocolla content is calculated from the difference between CuAS and CuAAA.</li> <li>Estimation parameters were chosen after taking into account output kriging estimation statistics, variogram models and data geometry.</li> <li>Grade estimates were constrained separately within the main low grade (&gt;0.3% Cu) domain and the hanging wall zones. All variables except copper were also estimated separately above the interpreted base of complete oxidation.</li> <li>Top cuts were applied to some variables based on examination of the histogram, and the spatial context of the outlier values.</li> <li>Definition of oxidation state for categorisation of material types is based on interpreted weathering surfaces.</li> <li>Estimates were validated visually in 3D view using Surpac and Datamine, by examining reproduction of global estimation statistics, and by comparing semi-local reproduction of grade in swath plots.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>

Criteria	Commentary
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>For open pit Mineral Resources, a variable cutoff is applied on Cu grades depending on oxidation state (1% Cu in oxide, 0.7% Cu in transition material, and 0.5% in sulphide ores). These cutoff's were calculated based on application of a simple economic model (Cu price \$7000/t. mining cost of \$2/t, additional ore mining plus processing and administration costs of \$22/t and Cu recovery of 45% in oxide, 65% in transition and 90% in fresh).</li> <li>For underground Mineral Resources, a minimum mining width of 4m and a cut off of 1.08%Cu equivalent was applied, where <math>CuEq = Cu + Ag * 0.008546</math>. This cut-off grade is derived from a more complex economic analysis incorporating taxation, transport smelting and refining charges.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Open pit Mineral Resources are reported within a shell optimised at 1.5x the Ore Reserve copper price (\$7000/t). Open pit mining is already underway.</li> <li>Underground Mineral Resources are constrained within the limits of the interpreted Cu grade domains. No economic feasibility study has yet been completed for Plutus, but at nearby Zeta the economic viability of underground mining has been demonstrated, and the same cut-off assumptions have been applied to Plutus.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Mineral Resources are reported using Cu recoveries of 45% in oxide, 65% in transition and 90% in fresh. These average recoveries are based on evaluation of historic mill performance</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>No issues affecting declaration of Mineral Resources are noted.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Bulk density has been estimated into the model from a database of measurements obtained using the Archimedeian weight in air, weight in water method.</li> <li>Subsequent to commencement of open pit mining, a number of grab samples from the pit have been tested, which confirm earlier core measurements</li> <li>Bulk density estimates are regarded as adequate.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The estimates have been classified into Measured, Indicated and Inferred Resources according to the JORC 2012 code, taking into account data quality, data density, geological continuity, and grade continuity and estimation confidence. Long section polygons were used to define zones of different classification.</li> <li>Measured Resources are largely restricted to the area of grade control drilling, where drill spacing is 25m along strike by 10m vertically. Measured Resource has been cautiously extended beyond the limits of grade control drilling where resource drilling is present at 50m (strike) by 25m RL.</li> <li>Indicated Resources are defined where drilling is at 100m centres along strike, by 50-70m or better in RL.</li> <li>Inferred Resources are defined around the margins of Indicated Resource.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>This estimate has been internally peer reviewed.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>The resource model has been compared against mill reconciled mine production. The mine reconciliation processes was changed significantly in October 2013, and the figures from prior to that date are not directly comparable with those after.</li> <li>Directly comparing Mineral Resource estimated tonnes and grade to physical production does not allow for differences due to either: <ul style="list-style-type: none"> <li>In the case of Ore Reserves the estimated and applied modifying factors such as cut-off grade, dilution and ore loss; or</li> <li>In the case of physical production the quality of the mining practices and the actually incurred dilution and ore loss.</li> </ul> </li> <li>Bearing this in mind the Mineral Resource has been compared to mine production for the 10 months from October 2013 to June 2014. For this period the resource models predict lower tonnes at a significantly higher grade for both Zeta and Plutus.</li> </ul>

Criteria	Commentary
	<p>The differences between claimed production and the resource model have been thoroughly investigated. Analysis from first principles indicates that the Mineral Resource estimate is consistent with the underlying data and no bias has been introduced in the estimation itself. The question of input data bias was also considered and, while some of the RC drilling has low precision, quality management practices conducted by DML do not indicate data bias.</p> <ul style="list-style-type: none"> <li>• In light of this analysis the majority of the difference between the Mineral Resource estimate and actual mine production lie with the application and actualisation of the modifying factors specifically the impact of ore loss and dilution.</li> </ul>



## Memorandum

**To:** Rob Cooper  
**From:** Mike Stewart

**Date:** 9 October 2014  
**Subject:** 2014 Zeta Mineral Resource and Exploration Target statements

Dear Rob

This document presents Mineral Resource and Exploration Target statements for the Zeta deposit, Botswana as at 30<sup>th</sup> June 2014.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Mike Stewart'.

**Mike Stewart**  
Senior Principal Consultant

## 1. Zeta Mineral Resources Statement

QG Australia Pty Ltd (QG) have provided Discovery Metals Limited (DML) with an updated resource model for the Zeta Deposit. The estimate is based on new geological interpretations that incorporate Reverse Circulation (RC) grade control drill holes and knowledge gained during the mining of the deposit to date.

The Zeta copper deposit, a sediment hosted stratiform copper deposit, is one of a number of deposits which together form the Boseto Operation. It is located about 80km southwest of the town of Maun, Botswana. Mining production from the Zeta deposit commenced in early 2012 and processing began in June of that year.

A total of 865 drill holes (413 diamond core, 93 RC resource drill holes and 359 RC grade control drill holes) have been used to define the mineral resource. QG reviewed the quality of drill data (location, sampling and assay quality) and conclude that the data is of acceptable quality for use in Mineral Resource estimation. Wireframe solid model interpretations of mineralisation using thresholds of ~0.3% and 1.5% copper were updated. Surfaces defining the base of complete oxidation and the top of fresh rock were also defined. Ordinary kriging was used to estimate copper, silver, sulphur, acid soluble copper, acetic acid soluble Cu and density into blocks constrained within the wireframe models. Hard boundaries were applied to estimation within mineralisation domains, and the oxide/transition boundary was also treated as hard for all variables except copper. Top cuts were applied to grades of silver and acid soluble copper.

The model has been classified according to the JORC Code (2012).

QG's estimate of Mineral Resources for the Zeta deposit as at 30<sup>th</sup> June 2014 is summarised in Table 1. A summary of the material aspects of the 2014 Mineral Resource estimate in the context of the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves', using the format of 'Table 1 Checklist of Assessment and Reporting Criteria' is appended.



Category	Mt	Cu (%)	Ag(ppm)
Measured	2.3	1.28	22
Indicated	7.7	1.35	25
<b>Subtotal Measured &amp; Indicated</b>	<b>10.0</b>	<b>1.33</b>	<b>24</b>
Inferred	8.9	1.78	26
<b>Total Mineral Resource</b>	<b>18.9</b>	<b>1.54</b>	<b>25</b>

Table 1: Zeta Mineral Resource Estimate as at 30<sup>th</sup> June 2014

*Notes: Mineral Resource estimates include: Open Pit resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground Mineral Resources reported above a cut-off grade of 1.08% Cu equivalent ( $CuEq = Cu + Ag \times 0.008546$ ) and a 4m minimum mining width. Open pit Mineral Resources are constrained within a 1.5x current price pit shell. Underground Mineral Resources are reported outside of this pit shell, within the limits of geological interpretation and extend to 800m below surface. This estimate is inclusive of such open pit and underground Ore Reserves as may be declared. All tonnage and grade figures have been rounded down to two or three significant figures, respectively; slight errors may occur due to rounding of values.*

## 2. Zeta Exploration Target

In addition to the Mineral Resource estimates declared above, an Exploration Target of 7-15Mt at 1.1-1.5 % Cu is declared for Zeta. It must be noted that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to estimate a Mineral Resource in the area of the declared Exploration Target and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Exploration Target	Mt	Cu%	Ag%
Zeta exploration target	7-15	1.1-1.5	20-25

Table 2. Zeta exploration target

Drilling at Zeta confirms the presence of mineralisation within the same stratigraphic horizon over a strike length of 9.5km. The structure has been traced and confirmed by drilling a further 7km to both north and south. Three drill-holes confirm the continuity of stratigraphy and mineralisation to a depth to 600m below surface (400mRL). Across the entire strike length, the stratigraphy is remarkable for both continuity and planarity. Figure 1 below shows the location of drill intersections through the mineralised horizon. The majority of drilling is focused on the area of Zeta pits and down dip. This area hosts both the widest and highest grade sections tested to date. It is apparent that the drilling to north and south of the pit areas is of generally narrower width and lower copper grade, but is also only to shallow depths. There remain large areas that have not been tested which have potential to host shoots of higher tenor.

The target tonnage defined is based on the presence of 2 shoots with the potential dimensions and grade tabulated below. The grade and width were derived from the average of the drill hole intercepts occurring an area of 500m strike by 500m depth in the centre of Zeta pits, weighted to account for clustering – 8.5m true width and 1.33% Cu. This area is shown as a



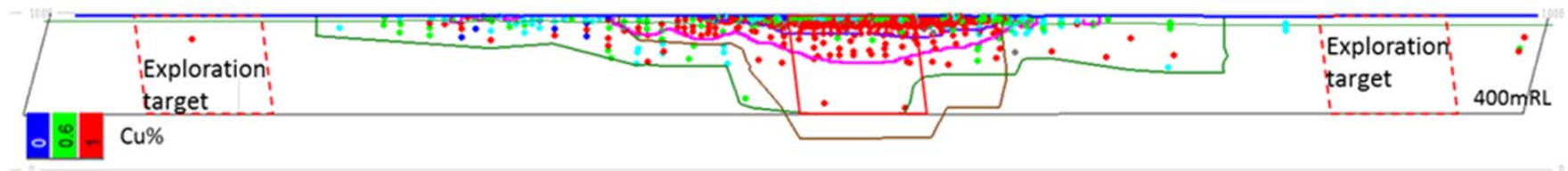
solid red box on the top long section shown in Figure 1. The dashed red boxes show the assumed dimensions of the exploration targets, to illustrate the size of these with respect to existing drilling. The location of these boxes is not meant to imply the location of mineralisation, but to illustrate the size of target sought.

	Low case	High case	Units
Number of shoots	2	2	
Size of mineralised 'shoot'	400	600	m strike
	500	500	m depth
Thickness	6	9	m
Density	2.8	2.8	t/m <sup>3</sup>
Tonnage per shoot	3,360,000	7,560,000	t
Average grade	1.1	1.5	%
Total Tonnage	6,720,000	15,120,000	t
Average Grade	1.1	1.5	%

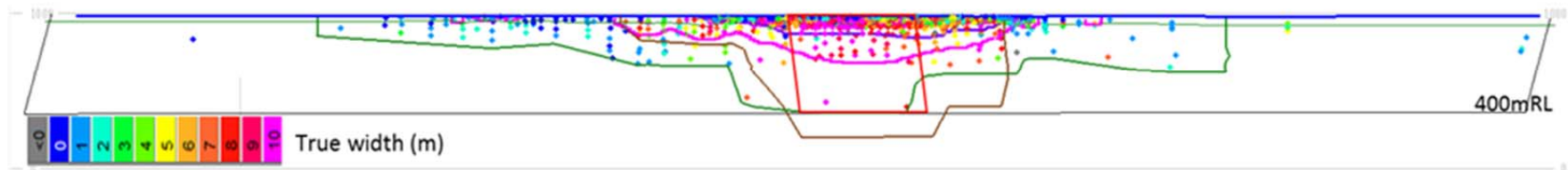
Table 3. Basis of calculation of Exploration Target tonnage and grade

The Exploration Targets identified in the vicinity of the Zeta Mineral Resource will be tested as part of future surface drilling programs, the timing of which will depend on the ranking compared to other targets and the priority assigned to these targets.

Cu grade of >0.3% mineralised intercept



Thickness of >0.3% mineralised intercept



Cu%\*m of >0.3% mineralised intercept

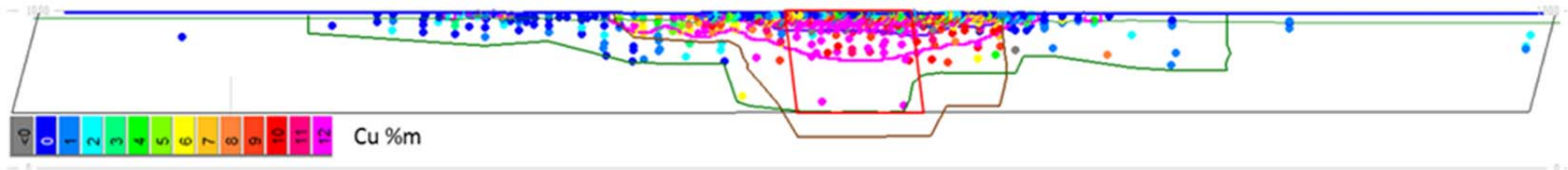


Figure 1. Long section view showing exploration target areas in relation to existing drilling and resource boundaries

### 3. Competent Persons Statements

The information in this announcement that relates to Mineral Resources and Exploration Targets for Discovery Metals Limited's Zeta Deposit in Botswana is based on information compiled by Michael Stewart, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (Membership No. 209311) and the Australian Institute of Geoscientists (Membership No. 3119). Michael Stewart is a full time employee of QG Australia Pty Ltd, and has no interest in, and is entirely independent of, Discovery Metals Limited. Michael Stewart has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Michael Stewart consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>No surface sampling techniques are used in Mineral Resource estimates.</li> <li>Diamond core is ½ core sampled after cutting. Samples are crushed and pulverised to produce the aliquots required for analysis.</li> <li>RC samples (1m length) are reduced to 3kg at the drill rig using a cone splitter. This is further reduced at the laboratory to 800g before pulverisation in a mixer mill to yield a bagged pulp sample, from which a number of aliquots are extracted for different analytical processes.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>The majority of earlier drilling was by diamond coring, with only a small number of RC holes (52 of 487).</li> <li>RC grade control commenced in June 2012, and at the time of estimation a total of 359 angled RC holes had been completed. These average 37m in length, with the longest being 84m.</li> <li>In the Zeta pit area, narrowing of the pit towards the base has meant that RC drill platforms are restricted and the lower sections of the pit have largely been mined without systematic RC grade control drill sampling. In the area of the north ramp, vertical holes were drilled off the ramp, but this orientation is suboptimal for sampling of a steeply dipping ore body.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Core recovery within the Zeta mineralised zones averages 90.3%. No discernible relationship exists between core recovery and either sample length or Cu grade.</li> <li>No systematic recording of RC sample recovery has been undertaken. Sample recovery observed at the rig was generally adequate, although was somewhat lower than optimal. The RC grade control rig in use was not fitted with dust suppression, and loss of fines is higher than desirable.</li> <li>A detailed examination was made of RC versus Diamond core sampling to investigate the possibility of sampling biases in RC drilling. No evidence of any systematic difference in RC intercept grades or intercept thickness was identified in this deposit, or any of the Boseto deposits.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>All drill holes have been geologically logged. Logging is focused on identification of underlying stratigraphic units. Specific logging of mineralisation is not undertaken. While logging provides a guide to subsequent interpretation of mineralisation it is not of adequate resolution for defining estimation domains, and these rely on grades of Cu, Ag and S.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>Diamond drill core is sawn longitudinally and half core samples submitted for analysis. All subsequent sample preparation was undertaken at commercial laboratory facilities in Johannesburg and Perth using industry standard crushing and pulverising equipment and protocols. QG have not directly reviewed pulp duplicate data reported by the laboratory, but scatter plots presented in earlier reports indicate that these data are of suitable precision for use in Mineral Resource estimates.</li> <li>RC grade control drill samples are initially split at the rig using a cone splitter. Samples are prepared and analysed at the onsite laboratory. Samples are crushed to 2mm, split to 800g using riffle splitter, pulverised to 90% passing 75µm.</li> <li>Field duplicate samples are collected at a ratio of 1:20. Laboratory duplicates are collected at the ratio of 1:25.</li> <li>Laboratory duplicates show a typically high level of precision with a coefficient of variation (CV) for Cu of 4% for samples greater than 10x level of detection.</li> <li>The precision of field duplicates is only moderately good for a base metal deposit (22% CV for Cu), and improvement should be investigated.</li> </ul>
<b>Quality of assay data</b>	<ul style="list-style-type: none"> <li>Information about the analytical methods and quality control measures applied to resource drilling up until mid-2012 is contained in previous Mineral Resource reports.</li> </ul>

Criteria	Commentary
<b>and laboratory tests</b>	<p>No significant issues were noted, and QG concur with the conclusion that data is of acceptable quality for use in resource estimates.</p> <ul style="list-style-type: none"> <li>• Analysis of RC grade control drilling is normally carried out at the onsite laboratory facility managed by Set Point Laboratories. From Sept 2013, approximately 50% of samples were assayed off site at the Set Point laboratory in Johannesburg.</li> <li>• In March 2014, DML terminated their contract with Set Point Laboratories, and appointed an alternative provider to manage and run the on-site laboratory. The majority of new data included in this estimate was assayed by Set Point on site, with a smaller quantity assayed at their lab in Johannesburg.</li> <li>• The following analytical methods are employed: <ul style="list-style-type: none"> <li>○ Cu and Ag - 3 acid digest with AAS finish;</li> <li>○ Acid Soluble Cu (CuAS) - sulphuric acid digest with AAS finish;</li> <li>○ S – LECO (CS-230)</li> <li>○ Acetic acid soluble Cu (CuAAA) – Acetic acid digest with AAS finish.</li> </ul> </li> <li>• DML insert commercial certified reference materials (CRM's) and blanks at a ratio of 1:20. Six main CRM's were submitted – three sourced from AMIS (African Minerals Standards), and three from OREAS.</li> <li>• Interpretation of the results of CRM's is hampered by a large number of mis-labelled samples. Once the most obvious errors have been filtered out or re-assigned, there does not appear to be any significant problem with analytical accuracy.</li> <li>• Analytical precision achieved by the on-site lab is poor, particularly for the AMIS CRM's. It is not clear whether this is the result of poor laboratory practice or poor homogeneity of the CRM's in use.</li> <li>• Only the acceptable level of accuracy and high density of grade control sampling make RC grade control data acceptable for use in Mineral Resource estimates. The poor quality of data collected during 2013/14 has been taken into account in classification. Only a small quantity of new data has been added to Zeta, but no upgrade of classification was applied to blocks informed by the new drilling.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• As far as QG are aware, no verification by independent assaying has been undertaken. However, the analytical grades are consistent with the tenor of mineralisation observed which is confirmed by subsequent phases of drilling and production.</li> <li>• When the thickness and grade of RC drill intercepts are compared to diamond core intercepts within a common volume, no systematic differences are apparent.</li> <li>• The only adjustment to assay data is translation between units of % and ppm for copper.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• Drilling completed by DML has been located using DGPS. Down hole surveys are dominantly collected using electronic single shot instruments. Diamond holes are mostly surveyed at regular intervals downhole. RC holes generally only have an in rods dip survey near collar, but as holes are short and at a high angle to structure this is considered adequate.</li> <li>• Topographic survey data was obtained from LIDAR survey, and has an accuracy of +/- 0.6m. Post commencement of mining, surface pickups are made using DGPS.</li> <li>• The grid system used is WGS84, Zone 34K.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• Intercept spacing at Zeta is variable. The broadest regular spacing is some 200m along strike by 60m vertical, which is progressively in-filled to 100m by 30m with some areas to 50mx 30m. Grade control drilling intercepts are spaced at 25m along strike by approximately 10m vertical.</li> <li>• Geological continuity is very high. This is seen in a very consistent planar geometry of mineralisation over 10's of km, and is confirmed by exposure from open pit. Continuity of grades within the mineralised horizons is typically lower, which can be seen as fluctuations around a fairly consistent average grade.</li> <li>• Samples are composited to 1m prior to estimation.</li> </ul>
<b>Orientation</b>	<ul style="list-style-type: none"> <li>• The vast majority of drilling crosses the mineralisation at a moderate to high angle</li> </ul>



Criteria	Commentary
<b>of data in relation to geological structure</b>	(>45°) and provides excellent definition of the margins of mineralisation.
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The chain of custody applied to older diamond core sampling is not known. RC samples are collected in plastic bags, bar-coded, sealed using zip-lock fasteners and submitted in batches.</li> <li>Sample security is not considered a major issue given the nature of the mineralisation, and the status of the project as a producing owner operated mine.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>Previous inspections of RC sampling conducted by CS-2 Pty Ltd and Snowden recommended that the sampling equipment and protocols be reviewed, improved and documented. This recommendation remains in place.</li> </ul>

### 3.1 Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>The Zeta deposit is located on Mining Lease No. 2010/99L, expiring on 19th December 2025.</li> <li>DML has 100% ownership of the lease and Boseto Copper Project as a whole.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencor International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>The Zeta deposit lies within the Ghanzi-Chobe Fold Belt (Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the Zeta deposit is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.</li> <li>Mineralisation is strongly associated with the development of shears within the altered mudstones of the lower D'Kar formation. These are generally most intensely developed adjacent to the rheologically competent Ngawako Pan sandstones in the footwall. Presence of other competent units has probably influenced the location of mineralisation above the base of the D'Kar formation.</li> <li>More detail is in Section 3 below.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A total of 869 drill holes were used for the Mineral Resource estimate – 43 of these were pre-DML. A drill hole listing is in the full Technical Report and accompanying database.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>Exploration Results are not being reported here – sample compositing for estimation was to 1m down hole lengths.</li> </ul>
<b>Relationship between mineralisation widths and intercept</b>	<ul style="list-style-type: none"> <li>The vast majority of drilling crosses the mineralisation at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralisation.</li> </ul>



Criteria	Commentary
<b>lengths</b>	
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>See Figure 1 above.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Exploration Results are not being reported here. The Mineral Resource estimate itself is a weighted and balanced estimate of the contained mineralisation.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>This information (geological mapping, metallurgical testwork, and bulk density data) is included in Section 3.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The Exploration Targets identified in the vicinity of the Zeta Mineral Resource will be tested as part of future surface drilling programs, the timing of which will depend on the ranking compared to other targets and the priority assigned to these targets. These Targets are shown in Figure 1.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Raw data is stored in an underlying acQuire database, established in October 2012. The acQuire database structure contains numerous internal consistency checks, as do the softwares into which drill-holes were imported (Minesight, Datamine, Surpac and Leapfrog).</li> <li>Data was provided to QG in the form of separate collar, survey, assay and lithology files in ASCII CSV format. A number of iterations of data extraction were required due to inconsistency between extracted versions. QG made independent checks of the data extraction process by referring records back to the underlying AcQuire database.</li> <li>Previous authors have performed checks from database back to original records. No further checking against raw data was carried out as part of this estimate.</li> <li>QG note that database software chosen by DML is powerful but requires a high level of knowledge/proficiency to use effectively. It is essential that DML properly resource the management of this database in order to reduce the risk presented by inadvertent misuse. QG recommend that a thorough independent review of database integrity and management be undertaken as a matter of urgency.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Mike Stewart visited site between Tuesday 25 and Friday 29<sup>th</sup> September, 2012.</li> <li>Inspections were made of the geology department, exploration core storage, grade control drilling operations, Zeta open pit mining area, Zeta low grade stockpiles and ROM stockpile area and the processing plant.</li> <li>Discussions were held with senior site Geological, Mining, Processing, and Laboratory staff, and covered the following: <ul style="list-style-type: none"> <li>mine geology practices and reconciliation;</li> <li>data management and ore blocking</li> <li>visits to the RC grade control rig;</li> <li>a visit around the Set Point Laboratory facility.</li> <li>mining practices, blasting and mine planning;</li> <li>an overview and tour of the process plant;</li> </ul> </li> <li>All staff were open, receptive and helpful during discussions.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>The general disposition of mineralisation is remarkable for its continuity and tabular planar geometry, being dominantly hosted in a single thin stratigraphic horizon</li> </ul>

Criteria	Commentary
	<p>continuous over many 10's of kilometers.</p> <ul style="list-style-type: none"> <li>• While mineralisation as defined by Cu grades is generally of consistent planar geometry, this does not correspond well with logged lithologies, and modelling of lithologies as logged will not be directly useful for definition of mineralisation. This is most likely due to inconsistency in logging, as at Zeta, the footwall contact is reliably marked by a pronounced jump in grade. It is also clearly apparent in open pit exposure being marked by a change in blockiness and colour.</li> <li>• The hanging wall contact is also generally well-marked by a pronounced step in grade. QG used a threshold of ~0.3% Cu to define a mineralised envelope, also taking into consideration the thickness of mineralisation and consistency of geometry.</li> <li>• An internal zone of consistently higher Cu grades was also differentiated, using a threshold of ~1.5%Cu. Again lateral thickness changes, and continuity of geometry internal to the enclosing 0.3% envelope, were taken into consideration as well as grade.</li> <li>• Analysis of grade behavior across defined boundaries provides strong support for the choice for thresholds used.</li> <li>• The most difficult aspect of mineralisation to model is weathering. Surfaces have been defined for the base of complete oxidation (marked by absence of sulphides), and the top of fresh (marked by start of partial oxidation of sulphide species). Definition of these surfaces is complicated by both their high spatial variability, and by the position of drill intersections (adjacent sections intersect mineralisation at the same RL, providing poor vertical control on the position of sub-horizontal surfaces).</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• The mineralised stratigraphic horizon at Zeta has been identified by drilling over a strike length of some 28km. Wireframe interpretations have been extended along this entire length. In the centre of the deposit, mineralisation has been identified to a depth of &gt;600m and is open at depth. On average the zone of Cu mineralisation is some 5.5m wide.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>• Copper, silver, sulphur, acid soluble copper, acetic acid soluble copper and density were estimated using ordinary kriging into blocks of 5m East, by 25m North by 10m RL. These block dimensions were selected to match the existing grade control model definition. Sub-cells to a minimum dimension of 0.625m E by 6.25m N by 1.25m RL were used to represent volume. Estimates were performed in Surpac software, while exploratory data analysis was undertaken in Isatis software.</li> <li>• The concentrations of two hydrated copper oxide mineral species (malachite and chrysocolla) were also estimated; malachite is estimated from an acetic acid Cu (CuAAA) assay, on the assumption that all/only Cu soluble in acetic acid is due to malachite, while chrysocolla content is calculated from the difference between CuAS and CuAAA.</li> <li>• Estimation parameters were chosen after taking into account output kriging estimation statistics, variogram models and data geometry.</li> <li>• Grade estimates were constrained separately within a high grade (&gt;1.5%Cu) and low grade (&gt;0.3% Cu) domains. All variables except copper were also estimated separately above the interpreted base of complete oxidation.</li> <li>• Top cuts were applied to some variables based on examination of the histogram, and the spatial context of the outlier values.</li> <li>• Definition of oxidation state for categorisation of material types is based on interpreted weathering surfaces.</li> <li>• Estimates were validated visually in 3D view using Surpac and Datamine, by examining reproduction of global estimation statistics, and by comparing semi-local reproduction of grade in swath plots.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>• Tonnages are estimated on a dry basis.</li> </ul>
<b>Cut-off</b>	<ul style="list-style-type: none"> <li>• For open pit Mineral Resources, a variable cutoff is applied on Cu grades depending on oxidation state (1% Cu in oxide, 0.7% Cu in transition material, and</li> </ul>

Criteria	Commentary
<b>parameters</b>	<p>0.5% in sulphide ores). These cutoff's were calculated based on application of a simple economic model (Cu price \$7000/t. mining cost of \$2/t, additional ore mining plus processing and administration costs of \$22/t and Cu recovery of 45% in oxide, 65% in transition and 90% in fresh).</p> <ul style="list-style-type: none"> <li>For underground Mineral Resources, a minimum mining width of 4m and a cut off of 1.08%Cu equivalent was applied, where <math>CuEq = Cu + Ag * 0.008546</math>. This cut-off grade is derived from a more complex economic analysis incorporating taxation, transport smelting and refining charges.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Open pit Mineral Resources are reported within a pit optimised at 1.5x current metal prices.</li> <li>Open pit mining is currently underway.</li> <li>Underground Mineral Resources are largely constrained to the limits of the interpreted high grade domain. A feasibility study has demonstrated economic viability of underground mining at Zeta, and it is planned to commence underground mining in the near future.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Mineral Resources are reported using Cu recoveries of 45% in oxide, 65% in transition and 90% in fresh. These average recoveries cutoffs are based on evaluation of historic mill performance.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>No issues affecting declaration of Mineral Resources are noted.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Bulk density has been estimated into the model from a database of measurements obtained using the Archimedean weight in air, weight in water method.</li> <li>Subsequent to commencement of open pit mining, a number of grab samples from the pit have been tested, which confirm earlier core measurements</li> <li>Bulk density estimates are regarded as adequate.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The estimates have been classified into Measured, Indicated and Inferred Resources according to the JORC 2012 code, taking into account data quality, data density, geological continuity, and grade continuity and estimation confidence. Long section polygons were used to define zones of different classification.</li> <li>Measured Resources are largely restricted to the area of grade control drilling, where drill spacing is 25m along strike by 10m vertically. Measured Resource has been cautiously extended beyond the limits of grade control drilling where resource drilling is present at 50m (strike) by 25m RL.</li> <li>Indicated Resources are defined where drilling is at 100m centres along strike, by 50-70m or better in RL.</li> <li>Inferred Resources are defined around the margins of Indicated Resource.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>This estimate has been internally peer reviewed.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>The resource model has been compared against mill reconciled mine production. The mine reconciliation processes was changed significantly in October 2013, and the figures from prior to that date are not directly comparable with those after.</li> <li>Directly comparing Mineral Resource estimated tonnes and grade to physical production does not allow for differences due to either: <ul style="list-style-type: none"> <li>In the case of Ore Reserves the estimated and applied modifying factors such as cut-off grade, dilution and ore loss; or</li> <li>In the case of physical production the quality of the mining practices and the actually incurred dilution and ore loss.</li> </ul> </li> <li>Bearing this in mind the resource has been compared to mine production for the 10 months from October 2013 to June 2014. For this period the resource models predict lower tonnes at a significantly higher grade for both Zeta and Plutus. The differences between claimed production and the resource model have been</li> </ul>

Criteria	Commentary
	<p>thoroughly investigated. Analysis from first principles indicates that the Mineral Resource estimate is consistent with the underlying data and no bias has been introduced in the estimation itself. The question of input data bias was also considered and, while some of the RC drilling has low precision, quality management practices conducted by DML do not indicate data bias.</p> <ul style="list-style-type: none"> <li>• In light of this analysis the majority of the difference between the Mineral Resource estimate and actual mine production lie with the application and actualisation of the modifying factors specifically the impact of ore loss and dilution.</li> </ul>

## Memorandum

**To:** Rob Cooper  
**From:** Mike Stewart

**Date:** 9 October 2014  
**Subject:** 2014 Zeta North East Mineral Resource and Exploration Target statements

Dear Rob

This document presents Mineral Resource and Exploration Target statements for the Zeta North East deposit, Botswana as at 30<sup>th</sup> June 2014.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Mike Stewart', with a long horizontal stroke extending to the right.

**Mike Stewart**  
Senior Principal Consultant



## 1. Zeta North East Mineral Resources Statement

QG Australia Pty Ltd (QG) have provided Discovery Metals Limited (DML) with an updated resource model for the Zeta North East (ZNE) Deposit. The estimate is based on new geological interpretations that incorporate additional Reverse Circulation (RC) and diamond core drill holes.

The Zeta North East copper deposit, a sediment hosted stratiform copper deposit, is one of a number of deposits which together form the Boseto Operation. It is located about 80km southwest of the town of Maun, Botswana. Mining production commenced at the Zeta deposit in early 2012 and processing began in June of that year. The Plutus pit was commenced in January 2013. Zeta North East is approximately 5km along strike to the north east of Zeta pit.

A total of 126 drill holes (70 diamond core and 56 RC resource drill holes) have been used to define the Mineral Resource (an additional 51 short vertical RC holes are included in the database but were not used in estimation). QG reviewed the quality of drill data (location, sampling and assay quality) and conclude that the data is of acceptable quality for use in resource estimation. Wireframe solid model interpretations of mineralisation using a threshold of 0.3% copper were created. Surfaces defining the base of complete oxidation and the top of fresh rock were also defined. Ordinary kriging was used to estimate copper, silver, sulphur, acid soluble copper, acetic acid soluble Cu and density into blocks constrained within the wireframe models. Hard boundaries were applied to estimation within mineralisation domains, and the oxide/transition boundary was also treated as hard for all variables except copper. Top cuts were applied to grades of copper, silver and sulphur.

The model has been classified according to the JORC Code (2012).

QG's estimate of Mineral Resources for the Zeta North East deposit as at 30<sup>th</sup> June 2014 is summarised in Table 1. A summary of the material aspects of the 2014 Mineral Resource estimate in the context of the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves', using the format of 'Table 1 Checklist of Assessment and Reporting Criteria' is appended.

Category	Mt	Cu (%)	Ag(ppm)
Measured	-	-	-
Indicated	2.0	1.50	22
<b>Subtotal Measured &amp; Indicated</b>	<b>2.0</b>	<b>1.50</b>	<b>22</b>
Inferred	9.6	1.47	29
<b>Total Mineral Resource</b>	<b>11.6</b>	<b>1.48</b>	<b>28</b>

Table 1: Zeta North East Mineral Resource Estimate as at 30<sup>th</sup> June 2014.

*Notes: Mineral Resource estimates include: Open Pit Mineral Resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground Mineral Resources reported above a cut-off grade of 1.08% Cu equivalent ( $CuEq = Cu + Ag \times 0.008546$ ) and a 4m minimum mining width. Open pit Mineral Resources are constrained within a pit shell run using 1.5x current Boseto Ore Reserves metal prices, while underground Mineral Resources are reported outside of this shell. All tonnage and grade figures have been rounded down to two or three significant figures, respectively; slight errors may occur due to rounding of values.*

## 2. Competent Persons Statements

The information in this announcement that relates to Mineral Resources and Exploration Targets for Discovery Metals Limited's Zeta North East Deposit in Botswana is based on information compiled by Michael Stewart, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (Membership No. 209311) and the Australian Institute of Geoscientists (Membership No. 3119). Michael Stewart is a full time employee of QG Australia Pty Ltd, and has no interest in, and is entirely independent of, Discovery Metals Limited. Michael Stewart has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a 'Competent Person' as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Michael Stewart consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>No surface sampling techniques are used in Mineral Resource estimates.</li> <li>Diamond core is ½ core sampled after cutting. Samples are crushed and pulverised to produce the aliquots required for analysis.</li> <li>RC samples (1m length) are reduced to 3kg at the drill rig using a cone splitter. This is further reduced at the laboratory to 800g before pulverisation in a mixer mill to yield a bagged pulp sample, from which a number of aliquots are extracted for different analytical processes.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>The drilling database comprises 70 diamond drill holes, 55 reverse circulation drill-holes and one water bore.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Core recovery within the mineralised zone at Zeta North East averages 97%, with few intervals below 90% recovery. Recovery is generally poorer within the zone of oxidation and very good in fresh rock.</li> <li>RC sample weights were measured for 51 of 55 holes and used to calculate sample recovery. Recovery averaged 66% of theoretical for dry samples (67% of total samples collected), 62% for moist samples (18% of total) and 57% for wet samples (15% of total). Moisture was encountered in 33 out of 55 holes, on average starting at around 50m depth. More water was encountered in the south of the deposit.</li> <li>A detailed examination was made of RC versus Diamond core sampling to investigate the possibility of sampling biases in RC sample recovery. No evidence of any systematic difference in RC intercept grades or intercept thickness was identified in this deposit, or any of the Boseto deposits.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>All drill holes have been geologically logged. Logging is focused on identification of underlying stratigraphic units. Specific logging of mineralisation is not undertaken. While logging provides a guide to subsequent interpretation of mineralisation it is not of adequate resolution for defining estimation domains, and these rely on assayed grades of Cu, Ag and S.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>Diamond drill core is sawn longitudinally and half core samples submitted for analysis. All subsequent sample preparation was undertaken at commercial laboratory facilities in Johannesburg and Perth using industry standard crushing and pulverising equipment and protocols. QG have not directly reviewed the QC data from these programs, but analysis and presentation in previous Mineral Resource report conclude that the data is of acceptable quality for Mineral Resource estimation.</li> <li>RC resource drilling undertaken by the DML exploration team in 2013 employed industry standard procedures. Dry samples are split at the rig using a cone splitter. Samples that are too wet to go through the splitter are collected and spear sampled from the bag. Comparison of A and B split weights from the rig shows typical scatter for one of these devices but is unbiased.</li> <li>RC field samples are shipped to ALS Chemex in Johannesburg. Sample preparation uses industry standard pulverisation and mass reduction equipment and procedures.</li> <li>RC field duplicate samples are collected at a ratio of 1:20. Laboratory pulp duplicates are collected at the ratio of 1:25.</li> <li>The precision of field duplicates is typical for a base metal deposit (11% CV for Cu).</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>Information about the analytical methods and quality control measures applied to diamond core resource drilling up until mid-2012 is contained in previous Mineral Resource reports. No significant issues were noted, and QG concur with the conclusion that data is of acceptable quality for use in resource estimates.</li> <li>RC resource drilling was assayed at ALS Chemex Laboratories in Johannesburg.</li> <li>DML insert commercial certified reference materials (CRM's) and blanks at a ratio of</li> </ul>

Criteria	Commentary
	<p>1:20. Six main CRM's were submitted – all sourced from OREAS in Melbourne.</p> <ul style="list-style-type: none"> <li>• Performance of all CRM's is within the performance gates suggested by OREAS in certification for both precision and accuracy.</li> <li>• Laboratory duplicates show a good level of precision with a coefficient of variation (CV) for Cu of 3% for samples greater than 10x level of detection.</li> <li>• Quality management practices employed by the DML exploration team for the Zeta NE drill program are documented in a written report.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• As far as QG are aware, no verification by independent assaying has been undertaken. However, the analytical grades are consistent with the tenor of mineralisation observed which is confirmed by subsequent phases of drilling and production.</li> <li>• When the thickness and grade of RC drill intercepts are compared to diamond core intercepts within a common volume, no systematic differences are apparent.</li> <li>• The only adjustment to assay data is translation between units of % and ppm for copper.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• The grid system used is WGS84, Zone 34K. The basis for creation of a topographic surface at Zeta NE is not known. At Zeta and Plutus, topographic survey is based on LIDAR survey tied to the mine datum.</li> <li>• Drilling completed by DML has been located using Omni-Logger DGPS with a stated accuracy of +/- 0.5m</li> <li>• There are small mis-matches between topography and collar locations (up to 1.5m), but these are minimal in the area where mineralisation projects to surface. DML will need to resolve these differences prior to commencing estimating waste tonnages and Ore Reserves.</li> <li>• Down hole surveys are dominantly collected using an electronic single shot instrument (REFLEX). Diamond holes are mostly surveyed at regular (30m) intervals downhole.</li> <li>• 26 of 55 RC holes have only a nominal collar orientation and no downhole surveys (shortest hole 27m, longest 81m, average 47m).</li> <li>• The other 29 RC holes have nominal orientations at collar, and one or more open hole magnetic surveys downhole. These show that RC holes generally lift and deviate to the right towards the bottom of holes, but that in shallower sections (in oxidised zone) holes generally deviate less, and not consistently.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• The majority of the oxidised zone at Zeta NE is drilled on a semi regular spacing of 100m-200m along strike by 25m-50m vertically. Fresh mineralisation is much less regularly drilled, mostly on 200-400m sections with one or two intersections down to approximately 100m below the base of weathering.</li> <li>• Geological continuity is very high. This is seen in a very consistent planar geometry of mineralisation over 10's of km.</li> <li>• Continuity of grades within the mineralised horizons is lower. Experience of mineralisation mined at Zeta and Plutus shows that there is broad ('00s m) continuity to generally higher and lower grade zones. However, infill drilling is required to localise estimates of metal sufficiently for medium or short term planning.</li> <li>• Samples are composited to 1m prior to estimation.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>• The majority of drilling crosses the mineralisation at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralisation.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>• The chain of custody applied to older diamond core sampling is not known.</li> <li>• RC samples are collected in plastic bags, bar-coded, sealed using zip-lock fasteners and submitted in batches. CRM materials are photographed on insertion into sample batches, which has proved useful in identifying sample number issues.</li> <li>• Sample security is not considered a major issue given the nature of the mineralisation,</li> </ul>

Criteria	Commentary
	and the status of the project as a producing owner operated mine.
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>Previous inspections of DML's RC sampling conducted by CS-2 Pty Ltd and Snowden recommended that the sampling equipment and protocols be reviewed, improved and documented. This recommendation remains in place.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>The Zeta North East prospecting license (PL099/2005) expires on 31<sup>st</sup> December 2014.</li> <li>The license has an application pending to be included within Mining License 2010/99L, which covers the Zeta and Plutus deposits.</li> <li>DML has 100% ownership of the Boseto Copper Project as a whole</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencor International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>The Zeta North East deposit, lies within the Ghanzi-Chobe Fold Belt (Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the Zeta North East deposit is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.</li> <li>Mineralisation is strongly associated with the development of shears within the altered mudstones of the lower D'Kar formation. These are generally most intensely developed adjacent to the rheologically competent Ngawako Pan sandstones in the footwall. Presence of other competent units has probably influenced the location of mineralisation above the base of the D'Kar formation.</li> <li>More detail is in Section 3 below.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A total of 126 drill holes were used for the Mineral Resource estimate. See Section 1.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>Exploration Results are not being reported here – sample compositing for estimation was to 1m down hole lengths.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>The vast majority of drilling crosses the mineralisation at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralisation.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>Not relevant to reporting of Mineral Resource estimates</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Not relevant to reporting of Mineral Resource estimates</li> </ul>
<b>Other substantive</b>	<ul style="list-style-type: none"> <li>Not relevant to reporting of Mineral Resource estimates</li> </ul>



Criteria	Commentary
<b>exploration data</b>	
<b>Further work</b>	<ul style="list-style-type: none"> <li>• Infill drilling will be required in order to elevate the estimates of Mineral Resources to a classification level suitable for conversion to Ore Reserves.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>• Raw data is stored in an underlying acQuire database, established in October 2012. The acQuire database structure contains numerous internal consistency checks, as do the softwares into which drill-holes were imported (Minesight, Datamine, Surpac and Leapfrog).</li> <li>• Data was provided to QG in the form of separate collar, survey, assay and lithology files in ASCII CSV format.</li> <li>• No further checking of database values back against raw data was carried out as part of this estimate.</li> <li>• QG note that database software chosen by DML is powerful but requires a high level of knowledge/proficiency to use effectively. It is essential that DML properly resource the management of this database in order to reduce the risk presented by inadvertent misuse. QG recommend that a thorough independent review of database integrity and management be undertaken as a matter of urgency.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>• Mike Stewart visited site between Tuesday 25 and Friday 29<sup>th</sup> September, 2012.</li> <li>• Inspections were made of the geology department, exploration core storage, grade control drilling operations, Zeta open pit mining area, Zeta low grade stockpiles and ROM stockpile area and the processing plant.</li> <li>• Discussions were held with senior site Geological, Mining, Processing, and Laboratory staff, and covered the following: <ul style="list-style-type: none"> <li>○ mine geology practices and reconciliation;</li> <li>○ data management and ore blocking</li> <li>○ visits to the RC grade control rig;</li> <li>○ a visit around the Set Point Laboratory facility.</li> <li>○ mining practices, blasting and mine planning;</li> <li>○ an overview and tour of the process plant;</li> </ul> </li> <li>• All staff were open, receptive and helpful during discussions.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>• The general disposition of mineralisation is remarkable for its continuity and tabular planar geometry, being dominantly hosted in a single thin stratigraphic horizon continuous over many 10's of kilometers.</li> <li>• While mineralisation as defined by Cu grades is generally of consistent planar geometry, this does not correspond well with logged lithologies, and modelling of lithologies as logged will not be useful for definition of mineralisation. This is most likely due to inconsistency in logging, as the same poor relationship was seen in Zeta logging, but pit exposure in Zeta has revealed a visually identifiable footwall contact.</li> <li>• At Zeta NE, a number of laterally discontinuous mineralised zones have been identified in the hanging wall of the main mineralised zone. Geometric uncertainty around these zones is higher, as the lateral extent is not well defined from drilling.</li> <li>• Estimation domains are instead based on Cu grade criteria. There is generally a pronounced step in Cu grades associated with the footwall contact, from background grades of &lt;0.2% to +1%Cu. The hanging wall contact is also generally well-marked by a pronounced step in grade. QG used a threshold of ~0.3% Cu to</li> </ul>

Criteria	Commentary
	<p>define a mineralised envelope, also taking into consideration the thickness of mineralisation and consistency of geometry.</p> <ul style="list-style-type: none"> <li>• Analysis of grade behavior across defined boundaries provides strong support for the choice for thresholds used.</li> <li>• The most difficult aspect of mineralisation to model is weathering. Surfaces have been defined for the base of complete oxidation (marked by absence of sulphides), and the top of fresh (marked by start of partial oxidation of sulphide species). There is high uncertainty on the definition of these surfaces as the position of drill intersections provides poor vertical control on the position of sub-horizontal surfaces. While the surfaces defined have comparatively low variability, it is likely that in reality these surfaces, and associated metallurgical characteristics, will vary significantly at the scale of bench mining.</li> <li>• QG recommend that DML drill a program of holes at close spacing along strike down the dip of the mineralised zone, with the specific purpose being to define the vertical position and variability of oxidation state and metallurgical characteristics, including bulk density.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• The Zeta NE deposit has been tested over a strike length of some 4.5km. The deepest drill intersection to date is 450m below surface, although the majority of the strike length has only been tested to a depth of some 200m. On average the zone of Cu mineralisation is some 5 wide.</li> <li>• The mineralised stratigraphic horizon that Zeta NE sits on has been identified by drilling over a strike length of some 28km.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>• Copper, silver, sulphur, acid soluble copper, acetic acid soluble copper and density were estimated using ordinary kriging into blocks of 5m East, by 50m North by 10m RL. These block dimensions were selected to match the existing grade control model definition. Sub-cells to a minimum dimension of 0.625m E by 6.25m N by 1.25m RL were used to represent volume. Estimates were performed in Surpac software, while exploratory data analysis was undertaken in Isatis software.</li> <li>• The concentrations of two hydrated copper oxide mineral species (malachite and chrysocolla) were also estimated; malachite is estimated from an acetic acid Cu (CuAAA) assay, on the assumption that all/only Cu soluble in acetic acid is due to malachite, while chrysocolla content is calculated from the difference between CuAS and CuAAA.</li> <li>• Estimation parameters were chosen after taking into account output kriging estimation statistics, variogram models and data geometry. Estimations were performed in two passes, using an expanded search for the second pass.</li> <li>• Grade estimates were constrained separately within mineralised domains. Total copper and silver estimates were not divided by oxidation state. For all other variables, oxidation state was treated as a hard boundary.</li> <li>• Top cuts were applied to some variables based on examination of the histogram, and the spatial context of the outlier values.</li> <li>• Definition of oxidation state for categorisation of material types is based on interpreted weathering surfaces.</li> <li>• Estimates were validated visually in 3D view using Surpac and Datamine, by examining reproduction of global estimation statistics, and by comparing semi-local reproduction of grade in swath plots.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>• Tonnages are estimated on a dry basis.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>• For open pit Mineral Resources, a variable cutoff is applied on Cu grades depending on oxidation state (1% Cu in oxide, 0.7% Cu in transition material, and 0.5% in sulphide ores). These cutoff's were calculated based on application of a simple economic model (Cu price \$7000/t. mining cost of \$2/t, additional ore mining plus processing and administration costs of \$22/t and Cu recovery of 45% in oxide, 65% in transition and 90% in fresh).</li> <li>• For underground Mineral Resources, a minimum mining width of 4m and a cut off</li> </ul>

Criteria	Commentary
	of 1.08%Cu equivalent was applied, where $CuEq = Cu + Ag * 0.008546$ . This cut-off grade is derived from a more complex economic analysis incorporating taxation, transport smelting and refining charges. It draws on the feasibility study undertaken for Zeta deposit.
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Open pit Mineral Resources are reported within a pit design optimised at 1.5x current price. Other parameters used in the optimisation are the same as those used for Zeta Ore Reserves. Considering the similarities between Zeta and Zeta NE, this is considered to be reasonable.</li> <li>No formal assessment has yet been made of potential underground Mineral Resources at Zeta NE, however, the completion of a feasibility study demonstrating the economic viability of underground mining at Zeta is considered to provide strong justification for reporting an underground Mineral Resource from Zeta NE.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Mineral Resources are reported using Cu recoveries of 45% in oxide, 65% in transition and 90% in fresh. These cutoffs are based on evaluation of historic mill performance.</li> <li>Trends in copper/sulphur ratio at Zeta NE are different to those seen in Zeta and Plutus, which may suggest that metallurgical performance will be different for Zeta NE. It is recommended that mineralogical and/or metallurgical testwork be carried out to ensure that the metallurgical assumptions used in the above analysis are justified for Zeta North East.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>No issues affecting declaration of Mineral Resources are noted.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Bulk density has been estimated into the model from a database of 531 measurements obtained using the Archimedeian weight in air, weight in water method. The number of data available for oxide (77), transitional (24) and cover sands (2) material is low. Cover sands were combined with oxide for estimation.</li> <li>Estimation was by ordinary kriging into estimation state domains carried out in two passes. Blocks not filled by estimation were assigned default values based on domain averages.</li> <li>Further bulk density information should be acquired (see earlier comments on Geological Interpretation).</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The estimates have been classified into Indicated and Inferred Resources according to the JORC 2012 code, taking into account data quality, data density, geological continuity, grade continuity and estimation confidence. Long section polygons were used to define zones of different classification.</li> <li>Indicated Resources are defined from the main mineralised zone only, where infill drilling to 100m centres along strike, by 25m or better in RL has been undertaken.</li> <li>The remainder of the constrained domains are classified as Inferred Resource. A significant proportion (~30%) of the Inferred Resource has been extrapolated beyond the limits of available data. However, a single deep hole below the limits of the Mineral Resource shows that there is strong confidence in the projected continuity of geology and the mineralised horizon.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>This estimate has been internally peer reviewed.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>No mining has yet been undertaken at Zeta NE.</li> <li>The principle area of risk present in the Mineral Resource estimate for Zeta NE relates to characterisation of oxidation state and associated metallurgical performance. Other areas of lesser risk include: presence of wet RC drill sampling; and characterisation of bulk density.</li> <li>Estimates are suitable for input into long term planning studies. The relative confidence in localisation of metal estimates is taken into consideration in classification.</li> </ul>



## Memorandum

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<b>Company:</b>	Discovery Metals Ltd	
<b>Sender/author:</b>	Matthew Readford	
<b>Date:</b>	21 June 2013	<b>Project reference:</b> P1815
<b>Subject:</b>	Selene Mineral Resource Estimate update to the JORC Code (2012)	

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Dear Discovery Metals Ltd

Xstract Mining Consultants Pty Ltd ("Xstract") reported a 'maiden' Mineral Resource Estimate for the Selene copper and silver prospect according to guidelines of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, 2004 Edition (The JORC Code, 2004) for Discovery Metals Ltd ("DML") on 28<sup>th</sup> November 2012. This Mineral Resource Statement and a supporting Mineral Resource Report updates the reporting of this Mineral Resource to JORC 2012 edition guidelines. This resource statement has an effective date of 21 June 2013.

The Selene copper and silver prospect ("Selene Prospect") is located in Ngamiland within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana, some 80 km southwest of the town of Maun. The Selene prospect forms part of DML's 100% owned Boseto Copper Project and is located in the northeast extremity of the Boseto Zone.

As with other known deposits of the Boseto Copper Project, mineralisation within the Selene prospect is a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.

DML undertook exploration drilling of the Selene Prospect between March and May 2011. Drilling comprises 52 holes, totalling 5,345 m. Three drillholes were abandoned resulting in drilling and supporting assay data for 37 reverse cycle ("RC"), four fully cored diamond drillholes and eight partial RC holes that have diamond drill core 'tails' in the mineralised zone. All were used in the estimation of the maiden Mineral Resource. Drillholes are supported by detailed collar records as well as downhole survey QA/QC records.

Drilling at the Selene Prospect occurs on 19 drill sections, spaced approximately 400 m apart along the strike of mineralisation. There are generally two drillholes per section, spaced approximately 40 m across strike. Six RC drillholes were drilled vertically. The remaining 46 drillholes were drilled at an approximate angle of 60° from horizontal at generally 300° to the northwest in order to intersect the plane of mineralisation at a high angle.

Xstract has reviewed all data provided by DML and confirms that the information is of sufficient quality to support a Mineral Resource for public reporting purposes.

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The mineralised zone of the Selene Prospect has been interpreted in all sections along the drill section strike length of approximately 7 km, and has also been intersected at depths between 25 m and 200 m. Mineralisation is generally dipping at 70° to the northwest, and is constrained within a zone of approximately 3 m thickness. The majority of samples are 1 m in length with core sampling derived from half core intervals and a minimum sampling width of 0.5 m.

Xstract produced a three-dimensional ("3D") geological interpretation of the mineralisation based primarily on the lithology and copper mineralisation in the drillhole intersections. Statistical analysis of the copper grades within this mineralised zone identified two grade populations. Further geological domaining to separate the grade population is considered impractical due to the narrow thickness and steep dip of the deposit. A high level study by Xstract further of the relationship between lithology and copper grades identified a correlation between limestone lithology and higher copper grades. This correlation supported the impracticality of further domaining due to the interbedded nature of the mineralised lithological units.

In addition to the 3D mineralisation interpretation, Xstract produced two-dimensional ("2D") surfaces of the base of the oxidation zones (Oxidised Zone, Transition Zone, and Fresh) as well as a lithological 'capping' surface demarcating overlying Tertiary to Quaternary, post mineralisation unconsolidated sands, calcrete, etc. of the Kalahari Group. These surfaces were derived from coded lithological logs within the drillhole database.

Ordinary kriging was used to estimate copper, silver and sulphur into a block model with parent cells of dimension 40 mE by 80 mN by 10 m, with sub-celling utilised to accurately represent the geometry and volume of the mineralisation model. Estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by a variography study of copper, silver and sulphur. No assay top cuts have been applied due to a low co-efficient of variation for all data sets. Short-range continuity along strike for copper, silver and sulphur is poorly defined due to the wide spaced drilling conducted over the area.

In the absence of specific gravity sampling data for Selene, a dry bulk density factor for estimating material tonnages has been derived utilising specific gravity measurements from the nearby Zeta deposit. The Zeta deposit is in the same prospective copper horizon as Selene and considered by DML to be of similar geology and mineralisation style, and thus representative for the Selene Prospect. Dry bulk density factors of 2.61 t/m<sup>3</sup> were used for calculating tonnages for capping and oxidised material, 2.61 t/m<sup>3</sup> for partially oxidised ('Transition Zone') material and fresh 2.69 t/m<sup>3</sup> or fresh rock. Due the lack of sampling in the oxidised zone, a mineral resource is not reported from this area.

A Total Inferred Mineral Resource of 16.0 Million tonnes at 1.0% Cu, 16 g/t Ag, and 0.3% S using a block cut-off grade of 0.6% Cu has been reported for the Selene Prospect in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The grade and tonnage values listed in Table 1 are an accumulation of blocks above a given cut-off within a portion of the Selene Prospect Mineral Resource Estimate block model defined by criteria based on proximity to drillholes and confidence in estimation continuity.



**Table 1: Selene Prospect Inferred Mineral Resource above a Cu% Grade Cut-off**

<b>Cu cut-off</b>	<b>Tonnes</b>	<b>Cu</b>	<b>Ag</b>	<b>S</b>
(%)	(Mt)	(%)	(g/t)	(%)
0.3	17.0	0.9	16	0.3
0.4	16.9	1.0	16	0.3
0.5	16.7	1.0	16	0.3
<b>0.6</b>	<b>16.0</b>	<b>1.0</b>	<b>16</b>	<b>0.3</b>
0.7	14.4	1.0	17	0.3
0.8	11.7	1.1	18	0.3
0.9	9.0	1.1	19	0.4
1.0	6.9	1.2	20	0.4
1.1	4.8	1.2	22	0.4
1.2	2.2	1.3	24	0.4
1.3	0.7	1.5	28	0.5
1.4	0.2	1.7	34	0.5
1.5	0.2	1.8	37	0.6
1.8	0.1	1.8	38	0.6

If you have any questions regarding the information above, please do not hesitate to contact me.

Yours sincerely

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## JORC Code, 2012 Edition – Table 1

### Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li><b>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</b></li> </ul>	<ul style="list-style-type: none"> <li>The DML sampling procedure documentation contains procedures for diamond core and RC chip samples. Diamond core sampling is generally constrained by a minimum sample length of 0.5 m and logged lithological or mineralogical boundaries. The general practice of sampling 3 m before visible copper mineralisation should be reviewed on a project by project basis.</li> <li>Xstract considered sampling to be adequate. Xstract observed during a site visit in October 2012 that the practice of sampling diamond core along the drill orientation line should be changed as cases were observed where half core samples were cut at less than optimal angles to mineralised structures-</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling comprises Reverse Circulation (RC), fully cored diamond drill holes with RC pre-collars and diamond core 'tails' in the mineralised zone. Diamond drill holes are either HQ or NQ in size with RC holes 5.5 inches in diameter. Core is orientated so as to intersect mineralisation at a high angle to the dip plane.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Overall recovery was considered by Xstract as reasonable once it was calculated correctly.</li> <li>Holes are re-drilled in transition and fresh rock if core recovery is lower than 30% for a drill string.</li> <li>DML advised Xstract that anomalous low and high (significantly over 100%) recovery values were often associated with low core retrieval <b>in drill runs in poor ground conditions, followed by the 'pick up' of core</b> in a subsequent drill run, resulting in individual core run recovery calculations of greater than 100%. <b>This method of calculating 'core recovery' is actually recording 'core retrieval' and potentially biasing confidence in diamond drill core results.</b> In the past, this has led to the omission of data from resource estimation.</li> <li>Xstract recommends DML review the core recovery data collection procedure to ensure that the recovery percentage recorded is representative of the entire interval. Anomalous core recovery values should be resolved between the driller and rig geologist as close as possible to the time of drilling the interval.</li> <li>Total weights of RC samples should be recorded as a measure of sample recovery from this drilling method.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Overall logging is to a good standard and level of detail</li> <li>The logging procedure documentation provided by DML included general logging principles plus specific diamond core logging and RC chip logging principles.</li> <li>Logging is written onto paper forms and entered into spreadsheets. DML was in the process to migrating to a data management system (aQuire) during the time of the site visit.</li> <li>Limited geotechnical data is logged within cored drillholes in the form of RQD measurements.</li> <li>It was noted during the site review that there appears to be confusion in logging <b>terminology regarding what is meant by 'oxidation'</b>. The current process is to log the degree of weathering down the hole, but also <b>define the degree of 'oxidation'</b> based on copper mineralogy.</li> <li>A general logging mark-up practice was recommended to assist in improving the quality and consistency of work.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Core is cut in half and sampled over 1 m intervals and split at lithological boundaries. Minimum sampling size is 0.1 m, Xstract recommend this be increased to 0.3 m to improve representivity.</li> <li>Xstract considers sampling and sub-sampling to be of good quality and appropriate for this level of study.</li> <li>RC sampling is conducted at 1 m intervals within mineralisation and are sampled dry. RC sampling was not observed during the site visit but the procedures states that it is cyclone split to a size of 2.5 kg. Samples are then spear or tube sampled.</li> <li><b>DML's drilling procedure strongly suggests that when dry sampling is not possible RC drilling is abandoned in favour of diamond drilling.</b></li> <li>The potential for sample cross-contamination in wet RC sampling is very high and given that mineralisation is generally a few metres wide it is likely to lead to significant estimation risk.</li> </ul>

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Xstrat has reviewed QAQC procedures for DML projects and suggests that procedures are adequate for this level of study.</li> <li>The DML procedure for QAQC field standards, blanks and duplicates is to submit one sample of each type in every 25 samples.</li> <li>Laboratory QC data (internal sample preparation duplicates, grind size passing check, sample preparation blanks, quartz flush analyses, standard analyses, sample weight checks, batch re-assay occurrences) is not obtained or analysed. Xstrat recommends this data is requested, analysed and retained for future Mineral Resource updates.</li> <li>Standards with a more relevant range of silver grades are recommended.</li> <li>Due to the narrow and planar nature of mineralisation field and laboratory duplicate strategy could be amended to increase the number of QC samples in mineralisation in order to provide a reasonable basis for evaluating sampling and laboratory procedures.</li> <li>DML should request Genalysis to introduce the use of quartz flushes between grinding DML samples as soon as possible.</li> <li>Blanks are submitted as pulps. Coarse material blanks samples should be introduced as part of the QAQC system to test for contamination in sample preparation.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> <li>Xstrat recommends a database audit be undertaken once the database migration is complete</li> <li>Some minor verification of logging and assay results was undertaken during the site visit but it was numerous enough to be representative</li> <li>No twinned holes have been used within the Selene Project.</li> </ul>



Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Drillhole collar positions were surveyed using OmniLogger Differential GPS (DGPS) from OmniSTAR's Global Positioning System products. The DGPS has a stated accuracy of <math>\pm 50</math> cm.</li> <li>A Reflex Ez-Trac<sup>TM</sup> instrument was used to record downhole survey measurements.</li> <li>Spatial coordinates for the Boseto prospects were supplied in World Geodetic System 1984, Zone 34 Southern Hemisphere (WGS84_34S). A translation to the DML Local Mine Grid (DML LG) provided by DML allowed for the deposits to be modelled with the mineralisation strike aligned to a grid north – south orientation</li> <li>A variation in the order of tens of metres between survey relative levels (RL) and that of surface topography is noted. DML has adjusted hole collar positions to surface topography for Mineral Resource modelling due to the very flat terrain. DML mine surveyors have a method for resolving these differences accurately and it is recommended the exploration division adopt these procedures for past and future surveys</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Data spacing at 400 m along strike is currently within limits of geological continuity but at or beyond the limit of copper, silver and sulphur grade continuity. Xstract recommends a component of infill drilling should target definition of grade continuity at a range of sample spacing that will define shorter range grade relationships and assist in detecting mineralisation controls (e.g. plunges). This will improve confidence in Mineral Resource estimation and make it possible to optimise drill spacing for project development objectives.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Sample security is managed with dispatch dates noted for each samples by the core technician, this is checked and confirmed at the laboratory on receipt of samples and discrepancies are corrected via telephone link up with laboratory and project geologist.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling techniques and data site audit occurred in October 2012. No information regarding previous audits was available.</li> </ul>

## Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Selene prospecting licence (PL098/2005) falls within a group of seven prospecting licences located in Ngamiland district, all of which expired September 2012.</li> <li>The license for the area that covers the Selene Prospect has currently been extended by the Botswana Department of Minerals, Energy and Water Resources whilst the renewal application is being considered. No third party has access to the area until the application finalised.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencore International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold</li> <li>DML exploration data is the only data used in resource estimation.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Selene Prospect is located in Ngamiland, within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the Selene Prospect is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A list of drillholes used with relevant information is within Appendix A of the report.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>This section is not relevant as data is composited for Mineral Resource estimation (Section 3).</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there <b>should be a clear statement to this effect (eg 'down hole length, true width not known')</b>.</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Images of mineralisation shown in Figure 7-1, 7-2 and 7-3.</li> </ul>

Criteria	JORC Code explanation	Commentary
Balanced reporting	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Individual Exploration Results are not being reported so this section is not relevant to Mineral Resource reporting.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>All available exploration data is included and documented in Mineral Resource reporting.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Details of planned further work were unknown at the time of the Mineral Resource reporting.</li> </ul>



### Section 3: Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>DML were migrating their drilling database from Microsoft (MS) Access to an acQuire software system during October 2012. Once the database migration is completed Xstract recommends a database validation be undertaken.</li> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A Competent Person site visit was undertaken by Matthew Readford during October 2012. This included visits to the Zeta mining operation, all Boesto exploration areas and assay laboratories (ALS Chemex laboratory, Johannesburg and Genalysis Intertek, Johannesburg and Perth).</li> </ul>

Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is generally consistent along strike for many kilometres and down-dip below deepest drilling.</li> <li>The mineralisation was interpreted on drill sections by Xstrat for Mineral Resource estimation based on geology logs and copper grades in order to delineate consistent higher-grade areas of the deposit at widths likely to be mined (This equated to approximately four metres or 4 x 1 metre samples downhole based on drillholes dipping at 60 degrees.).</li> <li>In most cases, two to three drill intersections were available to define mineralisation boundaries on any given section. The mineralisation was modelled to a maximum depth of 300 m below the surface topography.</li> <li>The mineralisation must maintain an overall downhole composite that reported a copper grade of greater than 0.3% Cu.</li> <li>Mineralisation outlines were terminated at half the drillhole spacing beyond the last known section of copper mineralisation.</li> <li>Where copper mineralisation appeared to extend past the last downhole intersection on a section, the copper mineralisation was extended for a distance equal to the general down-dip drill spacing.</li> <li>Assay data from within mineralisation wireframes was composited to the mode sample length of 1 m for analysis and estimation. The compositing routine respects the boundaries of the mineralisation domains but also optimises lengths so the majority are as close as possible to 1 m.</li> <li>At this stage of project development the wide-spaced drilling demonstrates reasonable geological continuity of mineralisation along strike and down-dip but variography suggests that grade continuity for copper, silver and sulphur generally needs to be defined by infill drilling.</li> <li>A base of oxidation surface was also interpreted from drill sections and extended laterally beyond the limits of the Mineral Resource model</li> <li>The mineralisation wireframes were constructed from interpretations on 19 east-west drill sections spaced between 200 m and 400 m apart</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation wireframes cover a strike distance of approximately 7 km and extend to 250 m below surface.</li> </ul>

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>No top cuts where applied to the three elements of the data composites.</li> <li>Ordinary Kriging interpolation was used to estimate the grades into model blocks of 40 mE by 80 mN by 40mRL in size for copper, silver and sulphur in the mineralised domain. Drill section spacing are 400 m apart and 40 m down-dip.</li> <li>Whilst there is a correlation between copper, silver and sulphur each element was estimated independently from the same or similar numbers of data</li> <li>Sub-celling was employed to accurately represent model volumes down to 1 mE by 8 mN by 0.05 mRL. Each sub-cell within the mineralisation outline was assigned the grade values of the parent cell.</li> <li>Software used in resource estimation was CAE Mining, Datamine software.</li> <li>Estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by the variography study. An anisotropic, elliptical search neighbourhood was orientated according to the modelled directions of grade continuity for copper, which generally correlate with the mineralisation strike and dip.</li> <li>Data density is not sufficient to model grade variation across the mineralisation width; geological modelling is currently simulating a mining cut-off envelope. Infill drilling is required to allow for more confident modelling of mineralisation volume and to make it possible to determine grade variation across strike and to a scale indicative of selective mining units along strike and down-dip.</li> <li>Search ranges for all elements were adjusted in order to ensure a reasonable number of samples were included in each block estimate and so data in the dip and across-dip direction <b>was not 'screened out' by the high dimensional ratios between strike and dip directions and the narrow across-dip width of mineralisation.</b></li> <li>A minimum of 4 and maximum of 24 samples were used in the estimation of each block grade.</li> <li>A comparison between the mean grades from the drillhole composite data and the block estimates (on a parent cell basis) was performed to ensure they were similar and the estimate unbiased in a global sense.</li> <li>Local validation of the estimates was performed by visually inspecting the block model in plan sections, long sections and cross sections. The quality of the local estimates was checked by averaging block grades and composite data for copper, silver and sulphur both along strike and down dip.</li> </ul>

Criteria	JORC Code explanation	Commentary
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal 0.6% Cu lower cut-off is used for reporting the mineral resource on the basis of what is used for the nearby Zeta open pit mining operation.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Mining studies for the Selene Prospect have not been carried out to determine optimal open pit and underground grade cut-offs. The Mineral Resources are considered to be amenable to extraction by open pit mining at this stage and modelling does not extend to sufficient depth to report a section of the Mineral Resource above a higher grade cut-off expected to be relevant to underground mining.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical assessment is recommended to confirm the assumptions made in the reporting of Mineral Resources that oxidised copper material is not economical to process.</li> <li>Different trends in Selene copper:sulphur ratios indicate that metallurgical assumptions from mining the Zeta pit should be tested for Selene.</li> </ul>

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>No environmental impact study has been completed at this initial stage of Mineral Resource estimation. Current assumptions of similarity to the nearby Zeta NE open pit operations and treatment at the established Boseto Copper concentrator mean there is no apparent material environmental impact on exploitation of this Mineral Resource at this stage.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Specific gravity measurements from the nearby Zeta deposit were used as a corollary for calculating dry bulk density factors due to similar geology and mineralogy. The absence of specific density sampling for the Selene Prospect is a significant consideration in classification of mineral resource for public reporting.</li> </ul>



Criteria	JORC Code explanation	Commentary
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the <b>Competent Person's view of the deposit.</b></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource has been classified as Inferred due to the current, early stages of project development where data density is typically beyond grade continuity along strike and key areas of spatial location and QAQC require further investigation and issue resolution.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Xstract has completed an internal peer review of this estimate and report.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>As this is a <b>'maiden'</b> Mineral Resource the prospect is in early stages of project development where data density is typically beyond grade continuity. Estimates do not model local grade variability across the mineralisation and only broadly along strike and down dip. Overall estimation accuracy is relatively low compared to projects sampled sufficiently to warrant a detailed mining study.</li> <li>No studies have been undertaken to quantify the accuracy and confidence of the estimate.</li> <li>Metallurgical and mining studies have also not been undertaken to evaluate the which proportion of this Mineral Resource may be economic</li> </ul>



## Memorandum

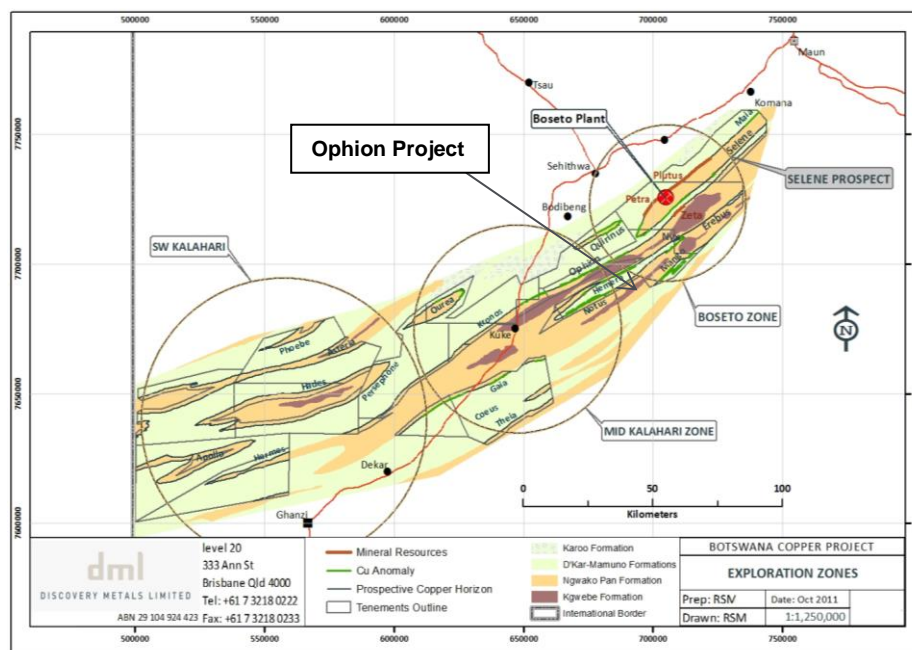
**Company:** Discovery Metals Ltd  
**Sender/author:** Matthew Readford  
**Date:** 21 June 2013  
**Project reference:** P1815  
**Subject:** Ophion Mineral Resource Estimate update to the JORC Code (2012)

Dear Discovery Metals Ltd

Xstract Mining Consultants Pty Ltd ("Xstract") reported a 'maiden' Mineral Resource Estimate for the Ophion copper and silver prospect according to guidelines of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, 2004 Edition (The JORC Code, 2004) for Discovery Metals Ltd ("DML") on 28<sup>th</sup> November 2012. This Mineral Resource Statement and a supporting Mineral Resource Report updates the reporting of this Mineral Resource to JORC 2012 edition guidelines. This resource statement has an effective date of 21 June 2013.

The Ophion copper and silver project ("Ophion") is located in Ngamiland within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana, some 80 km southwest of the town of Maun. Ophion forms part of DML's 100% owned Boseto Copper Project and is located in the southwest extremity of the Boseto Zone (Figure 1).

**Figure 1: Location of Ophion Project in the Boseto Copper Belt Project**



Source: Discovery Metals Limited

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As with other known deposits of the Boseto Copper Project, mineralisation within Ophion is a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.

DML undertook exploration drilling of Ophion in several stages between September 2009 and March 2012. Drilling comprises 63 drillholes, totalling 6,070 m. Of these, 36 drillholes (26 reverse circulation ("RC") and six diamond core) were located in the area modelled for Mineral Resource estimation. Drill holes are supported by detailed collar records as well as downhole surveys and QA/QC data.

The Ophion Project has been drilled on 31 drill sections spaced approximately 400 m to 1,600 m apart along the strike of mineralisation. There are between one to three drill holes per section, spaced approximately 25 m to 60 m across strike. They are mostly drilled at an approximate angle of 60° from horizontal at an azimuth of 140° (east-south-east) in order to intersect the plane of mineralisation at a high angle. The majority of samples are 1 m in length with core sampling derived from half core intervals. Xstract has reviewed all data provided by DML and confirms that the information used for modelling is of sufficient quality to support a Mineral Resource for public reporting purposes.

The mineralised zone of Ophion has been interpreted in 14 sections spaced approximately 400 m apart along a 5.5 km strike length in north-eastern end of the project area. Mineralisation is generally dipping at 80° to the northwest, has been intersected at depths between 30 m to 200 m and is constrained within seven zones of approximately 2 m to 6 m thickness, with up to three at a time sub-parallel to each other.

DML provided 2D surfaces of the base of the oxidation zones (oxidised zone, transition zone, and **fresh rock**) as well as a lithological 'capping' surface demarcating overlying Tertiary to Quaternary, post mineralisation unconsolidated sands and calcrete of the Kalahari Group.

DML also provided a three-dimensional ("3D") geological interpretation of the mineralisation based primarily on the lithology and copper grades in the drillhole data. Domains were modified by Xstract to create spatially consistent areas of the deposit at widths likely to be mined. In certain circumstances, one metre sample lengths with copper grades less than 0.3% Cu were included to maintain an overall downhole four metre composite that reported a copper grade of greater than 0.3% Cu.

Ordinary kriging was used to estimate copper, silver and sulphur into block models of the mineralisation wireframes. The block model parent cells have dimensions of 40 mE by 80 mN by 40 mRL, with sub-celling employed to accurately represent the geometry and volume of the mineralisation models. The estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by variography study of copper, silver and sulphur. The short-range continuity along strike for copper, silver and sulphur is poorly defined due to the wide spaced drilling over the area.

Specific gravity sampling data for Ophion was used to determine dry bulk density factors for estimating material tonnages. Dry bulk density factors of 2.64 t/m<sup>3</sup> was used for calculating tonnages for capping and oxidised material, 2.72 t/m<sup>3</sup> for partially **oxidised ('transition zone')** material and 2.75 t/m<sup>3</sup> for fresh rock. A mineral resource is not estimated in the oxidised zone due to lack of sampling.

A total Inferred Mineral Resource of 14.0 Mt at 1.0% Cu, 12 g/t Ag, and 0.3% S using a block cut-off grade of 0.6% Cu has been reported for the Ophion Prospect in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The grade and tonnage values listed in Table 1 are an accumulation of blocks above a given cut-off within a portion of the Ophion Project Mineral Resource Estimate block model defined by criteria based on proximity to drill holes and confidence in estimation continuity.

**Table 1: Ophion Project Inferred Mineral Resource above a Cu% Grade Cut-off**

<b>Cu cut-off</b>	<b>Tonnes</b>	<b>Cu</b>	<b>Ag</b>	<b>S</b>
(%)	(Mt)	(%)	(g/t)	(%)
0.01	17.8	0.9	11	0.2
0.60	14.0	1.0	12	0.3
0.80	11.6	1.0	13	0.3
1.00	3.6	1.2	18	0.3
1.20	2.1	1.3	22	0.3

If you have any questions regarding the information above, please do not hesitate to contact me.

Yours sincerely

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Matthew Readford  
 Manager – Geology (Brisbane)  
 BSc (Hons) (Structural Geology), MAusIMM  
 Xstract Mining Consultants Pty Ltd

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# 1 JORC Code, 2012 Edition – Table 1

## Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li><b>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</b></li> </ul>	<ul style="list-style-type: none"> <li>The DML sampling procedure documentation contains procedures for diamond core and RC chip samples. Diamond core sampling is generally constrained by a minimum sample length of 0.5 m and logged lithological or mineralogical boundaries. The general practice of sampling 3 m before visible copper mineralisation should be reviewed on a project by project basis.</li> <li>Xstract considered sampling to be adequate. Xstract observed during a site visit in October 2012 that the practice of sampling diamond core along the drill orientation line should be changed as cases were observed where half core samples were cut at less than optimal angles to mineralised structures-</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling comprises Reverse Circulation (RC), fully cored diamond drill holes with RC pre-collars and diamond core 'tails' in the mineralised zone. Diamond drill holes are either HQ or NQ in size with RC holes 5.5 inches in diameter. Core is orientated so as to intersect mineralisation at a high angle to the dip plane.</li> </ul>



Criteria	JORC Code explanation	Commentary
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Overall recovery was considered by Xstrat as reasonable once it was calculated correctly.</li> <li>Holes are re-drilled in transition and fresh rock if core recovery is lower than 30% for a drill string.</li> <li>DML advised Xstrat that anomalous low and high (significantly over 100%) recovery values were often associated with low core retrieval <b>in drill runs in poor ground conditions, followed by the 'pick up' of core</b> in a subsequent drill run, resulting in individual core run recovery <b>calculations of greater than 100%. This method of calculating 'core recovery' is actually recording 'core retrieval' and potentially biasing</b> confidence in diamond drill core results. In the past, this has led to the omission of data from resource estimation.</li> <li>Xstrat recommends DML review the core recovery data collection procedure to ensure that the recovery percentage recorded is representative of the entire interval. Anomalous core recovery values should be resolved between the driller and rig geologist as close as possible to the time of drilling the interval.</li> <li>Total weights of RC samples should be recorded as a measure of sample recovery from this drilling method.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Overall logging is to a good standard and level of detail</li> <li>The logging procedure documentation provided by DML included general logging principles plus specific diamond core logging and RC chip logging principles.</li> <li>Logging is written onto paper forms and entered into spreadsheets. DML was in the process to migrating to a data management system (aQuire) during the time of the site visit.</li> <li>Limited geotechnical data is logged within cored drillholes in the form of RQD measurements.</li> <li>It was noted during the site review that there appears to be confusion in logging terminology <b>regarding what is meant by 'oxidation'</b>. The current process is to log the degree of weathering down the hole, but also <b>define the degree of 'oxidation'</b> based on copper mineralogy.</li> <li>A general logging mark-up practice was recommended to assist in improving the quality and consistency of work.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Core is cut in half and sampled over 1m intervals and split at lithological boundaries. Minimum sampling size is 0.1 m, Xstract recommend this be increased to 0.3 m to improve representatively.</li> <li>Xstract considers sampling and sub-sampling to be of good quality and appropriate for this level of study.</li> <li>RC sampling is conducted at 1 m intervals within mineralisation and are sampled dry. RC sampling was not observed during the site visit but the procedures states that it is cyclone split to a size of 2.5 kg. Samples are then spear or tube sampled.</li> <li><b>DML's drilling procedure</b> strongly suggests that when dry sampling is not possible RC drilling is abandoned in favour of diamond drilling.</li> <li>The potential for sample cross-contamination in wet RC sampling is very high and given that mineralisation is generally a few metres wide it is likely to lead to significant estimation risk.</li> </ul>

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Xstrat has reviewed QAQC procedures for DML projects and suggests that procedures are adequate for this level of study.</li> <li>The DML procedure for QAQC field standards, blanks and duplicates is to submit one sample of each type in every 25 samples.</li> <li>Laboratory QC data (internal sample preparation duplicates, grind size passing check, sample preparation blanks, quartz flush analyses, standard analyses, sample weight checks, batch re-assay occurrences) is not obtained or analysed. Xstrat recommends this data is requested, analysed and retained for future Mineral Resource updates.</li> <li>Standards with a more relevant range of silver grades are recommended.</li> <li>Due to the narrow and planar nature of mineralisation field and laboratory duplicate strategy could be amended to increase the number of QC samples in mineralisation in order to provide a reasonable basis for evaluating sampling and laboratory procedures.</li> <li>DML should request Genalysis to introduce the use of quartz flushes between grinding DML samples as soon as possible.</li> <li>Blanks are submitted as pulps. Coarse material blanks samples should be introduced as part of the QAQC system to test for contamination in sample preparation.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> <li>Xstrat recommends a database audit be undertaken once the database migration is complete</li> <li>Some minor verification of logging and assay results was undertaken during the site visit but it was numerous enough to be representative</li> <li>No twinned holes have been used within the Ophion Project.</li> </ul>

Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Drillhole collar positions were surveyed using OmniLogger Differential GPS (DGPS) from OmniSTAR's Global Positioning System products. The DGPS has a stated accuracy of <math>\pm 50</math> cm.</li> <li>A Reflex Ez-Trac<sup>TM</sup> instrument was used to record downhole survey measurements.</li> <li>Spatial coordinates for the Boseto prospects were supplied in World Geodetic System 1984, Zone 34 Southern Hemisphere (WGS84_34S). A translation to the DML Local Mine Grid (DML LG) provided by DML allowed for the deposits to be modelled with the mineralisation strike aligned to a grid north – south orientation</li> <li>A variation in the order of tens of metres between survey relative levels (RL) and that of surface topography is noted. DML has adjusted hole collar positions to surface topography for Mineral Resource modelling due to the very flat terrain. DML mine surveyors have a method for resolving these differences accurately and it is recommended the exploration division adopt these procedures for past and future surveys</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Data spacing at 400 m along strike is currently within limits of geological continuity but at or beyond the limit of copper, silver and sulphur grade continuity. Xstrat recommends a component of infill drilling should target definition of grade continuity at a range of sample spacing that will define shorter range grade relationships and assist in detecting mineralisation controls (e.g. plunges). This will improve confidence in Mineral Resource estimation and make it possible to optimise drill spacing for project development objectives.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Sample security is managed with dispatch dates noted for each samples by the core technician, this is checked and confirmed at the laboratory on receipt of samples and discrepancies are corrected via telephone link up with laboratory and project geologist.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling techniques and data site audit occurred in October 2012. No information regarding previous audits was available.</li> </ul>



## Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The Ophion prospecting licence (PL100/2005) falls within a group of seven prospecting licences located in Ngamiland district, all of which expired September 2012.</li> <li>The license for the area that covers the Ophion Prospect has currently been extended by the Botswana Department of Minerals, Energy and Water Resources whilst the renewal application is being considered. No third party has access to the area until the application finalised.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencore International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold</li> <li>DML exploration data is the only data used in resource estimation.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Ophion Prospect is located in Ngamiland, within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the Ophion Prospect is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopryrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A list of drillholes used with relevant information is within Appendix B of the report.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>This section is not relevant as data is composited for Mineral Resource estimation (Section 3).</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there <b>should be a clear statement to this effect (eg 'down hole length, true width not known')</b>.</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>

Criteria	JORC Code explanation	Commentary
Diagrams	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Images of mineralisation shown in Figure 7-1 and 7-2.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Individual Exploration Results are not being reported so this section is not relevant to Mineral Resource reporting.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>All available exploration data is included and documented in Mineral Resource reporting.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Details of planned further work were unknown at the time of the Mineral Resource reporting.</li> </ul>

### Section 3: Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>DML were migrating their drilling database from Microsoft (MS) Access to an acQuire software system during October 2012. Once the database migration is completed Xstract recommends a database validation be undertaken.</li> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A Competent Person site visit was undertaken by Matthew Readford during October 2012. This included visits to the Zeta mining operation, all Boesto exploration areas and assay laboratories (ALS Chemex laboratory, Johannesburg and Genalysis Intertek, Johannesburg and Perth).</li> </ul>

Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is generally consistent along strike for many kilometres and down-dip below deepest drilling.</li> <li>The mineralisation was interpreted on drill sections by Xstract for Mineral Resource estimation based on geology logs and copper grades in order to delineate consistent higher-grade areas of the deposit at widths likely to be mined (This equated to approximately four metres or 4 x 1 metre samples downhole based on drillholes dipping at 60 degrees.).</li> <li>In most cases, two to three drill intersections were available to define mineralisation boundaries on any given section. The mineralisation was modelled to a maximum depth of 230 m below the surface topography.</li> <li>The mineralisation must maintain an overall downhole composite that reported a copper grade of greater than 0.3% Cu.</li> <li>Mineralisation outlines were terminated at half the drillhole spacing beyond the last known section of copper mineralisation.</li> <li>Where copper mineralisation appeared to extend past the last downhole intersection on a section, the copper mineralisation was extended for a distance equal to the general down-dip drill spacing.</li> <li>Assay data from within mineralisation wireframes was composited to the mode sample length of 1 m for analysis and estimation. The compositing routine respects the boundaries of the mineralisation domains but also optimises lengths so the majority are as close as possible to 1 m.</li> <li>At this stage of project development the wide-spaced drilling demonstrates reasonable geological continuity of mineralisation along strike and down-dip but variography suggests that grade continuity for copper, silver and sulphur generally needs to be defined by infill drilling.</li> <li>A base of oxidation surface was also interpreted from drill sections and extended laterally beyond the limits of the Mineral Resource model</li> <li>The mineralisation wireframes were constructed from interpretations on 14 east-west drill sections spaced between 400 m apart</li> </ul>

Criteria	JORC Code explanation	Commentary
Dimensions	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation wireframes cover a strike distance of approximately 5.5 km and extend to 230 m below surface</li> <li>The copper mineralisation is discernible from drill intersections as four main zones. Each zone is approximately 2 m to 6 m thick and generally dipping 80° to the west. Drilling intersected mineralisation at depths between 23 m and 190 m below surface and always below the base of complete oxidation.</li> </ul>



Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>A top cut of 5.0% Cu was applied to the copper data composites to limit the effect of high grade outliers located at depth creating an artificial high grade bias in areas where block grades were extrapolated beyond drilling.</li> <li>Ordinary Kriging interpolation was used to estimate the grades into model blocks of 40 mE by 80 mN by 40mRL in size for copper, silver and sulphur in the mineralised domain. Drill section spacing is 400 m apart and between 25 m and 60 m down-dip.</li> <li>Whilst there is a correlation between copper, silver and sulphur each element was estimated independently from the same or similar numbers of data</li> <li>Sub-celling was employed to accurately represent model volumes down to 1 mE by 8 mN by 0.04 mRL. Each sub-cell within the mineralisation outline was assigned the grade values of the parent cell.</li> <li>Software used in resource estimation was CAE Mining, Datamine software.</li> <li>Estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by the variography study. An anisotropic, elliptical search neighbourhood was orientated according to the modelled directions of grade continuity for copper, which generally correlate with the mineralisation strike and dip.</li> <li>Data density is not sufficient to model grade variation across the mineralisation width; geological modelling is currently simulating a mining cut-off envelope. Infill drilling is required to allow for more confident modelling of mineralisation volume and to make it possible to determine grade variation across strike and to a scale indicative of selective mining units along strike and down-dip.</li> <li>Search ranges for all elements were adjusted in order to ensure a reasonable number of samples were included in each block estimate and so data in the dip and across-dip direction <b>was not 'screened out' by the high dimensional ratios</b> between strike and dip directions and the narrow across-dip width of mineralisation.</li> <li>A minimum of 4 and maximum of 24 samples were used in the estimation of each block.</li> <li>A comparison between the mean grades from the drillhole composite data and the block estimates (on a parent cell basis) was performed to ensure they were similar and the estimate unbiased in a global sense.</li> <li>Local validation of the estimates was performed by visually inspecting the block model in plan, long sections and cross sections. The quality of the local estimates was checked by averaging block grades and composite data for copper, silver and sulphur both along strike and down dip.</li> </ul>

Criteria	JORC Code explanation	Commentary
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal 0.6% Cu lower cut-off is used for reporting the mineral resource on the basis of what is used for the nearby Zeta open pit mining operation.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Mining studies for the Ophion Prospect have not been carried out to determine optimal open pit and underground grade cut-offs. The Mineral Resources are considered to be amenable to extraction by open pit mining at this stage and modelling does not extend to sufficient depth to report a section of the Mineral Resource above a higher grade cut-off expected to be relevant to underground mining.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical assessment is recommended to confirm the assumptions made in the reporting of Mineral Resources that oxidised copper material is not economical to process.</li> <li>Different trends in Ophion copper:sulphur ratios indicate that metallurgical assumptions from mining the Zeta pit should be tested for Ophion.</li> </ul>

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>No environmental impact study has been completed at this initial stage of Mineral Resource estimation. Current assumptions of similarity to the nearby Zeta NE open pit operations and treatment at the established Boseto Copper concentrator mean there is no apparent material environmental impact on exploitation of this Mineral Resource at this stage.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Specific gravity measurements were taken from drill core were grouped into oxidation domains defined in the geological model and mean values were used as a dry bulk density factor on this basis.</li> <li>A bulk density factor of 2.64 t/m<sup>3</sup> was used for oxidised material due to lack of sufficient sampling. This value was derived from open pit mining of the Zeta deposit.</li> <li>Estimation of bulk density factors from specific gravity sampling can be improved through more representative sampling of weathered zones and incorporating geological domain interpretations for lithology and weathering.</li> </ul>

Criteria	JORC Code explanation	Commentary
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the <b>Competent Person's view of the deposit</b>.</li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource has been classified as Inferred due to the current, early stages of project development where data density is typically beyond grade continuity along strike and key areas of spatial location and QAQC require further investigation and issue resolution.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Xstract has completed an internal peer review of this estimate and report.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>As this is a <b>'maiden'</b> Mineral Resource the prospect is in early stages of project development where data density is typically beyond grade continuity. Estimates do not model local grade variability across the mineralisation and only broadly along strike and down dip. Overall estimation accuracy is relatively low compared to projects sampled sufficiently to warrant a detailed mining study.</li> <li>No studies have been undertaken to quantify the accuracy and confidence of the estimate.</li> <li>Metallurgical and mining studies have also not been undertaken to evaluate the which proportion of this Mineral Resource may be economic</li> </ul>



## Memorandum

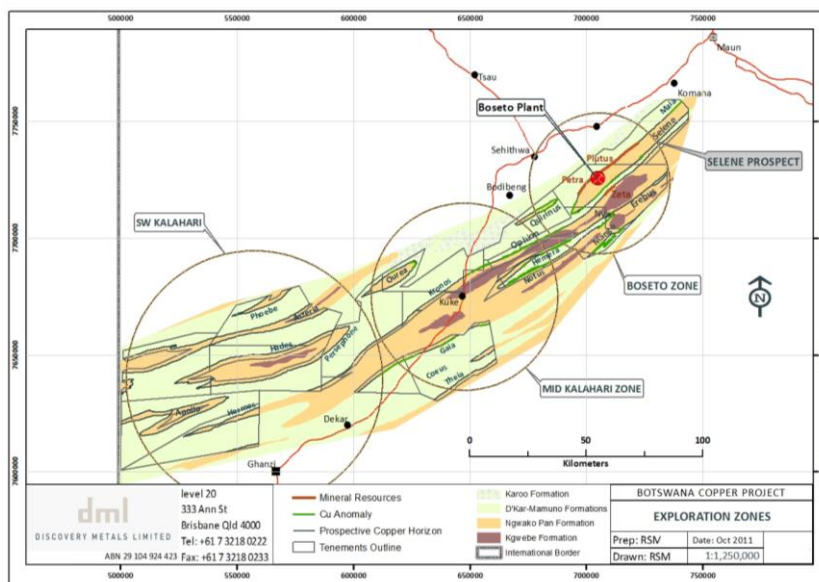
**Company:** Discovery Metals Ltd  
**Sender/author:** Matthew Readford  
**Date:** 21 June 2013  
**Project reference:** P1815  
**Subject:** North East Mango 1 Mineral Resource Estimate update to the JORC Code (2012)

Dear Discovery Metals Ltd

Xstract Mining Consultants Pty Ltd ("Xstract") reported a 'maiden' Mineral Resource Estimate for the NE Mango 1 copper and silver prospect according to guidelines of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, 2004 Edition (The JORC Code, 2004) for Discovery Metals Ltd ("DML") on 16<sup>th</sup> November 2012. This Mineral Resource Statement and a supporting Mineral Resource Report updates the reporting of this Mineral Resource to JORC 2012 edition guidelines. This resource statement has an effective date of 21 June 2013.

The North East Mango 1 copper and silver prospect ("NE Mango 1 Prospect") is located in Ngamiland within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana, some 80 km southwest of the town of Maun. The Mango prospect forms part of DML's 100% owned Boseto Copper Project and is located in the northeast extremity of the Boseto Zone.

**Figure 1: Location of NE Mango 1 Prospect in the Boseto Zone**



Source: Discovery Metals Limited

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As with other known deposits of the Boseto Copper Project, mineralisation within the Mango prospect is a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.

DML undertook exploration drilling of the NE Mango 1 Prospect between January 2011 and March 2012. Drilling comprises 52 drillholes, totalling 4,967 m. Six drillholes were excluded from the resource estimation process due to the uncertainty of the data and location of the holes resulting is a dataset of 46 completed drillholes comprising 22 reverse circulation ("RC"), 1 fully diamond cored ("DD"), 23 partially diamond cored drillholes (RC/DD and NC/DD). All 22 RC drillholes and two diamond drillholes were drilled vertically. Only 17 drillholes were used in the grade estimation of the Mineral Resource. Drillholes are supported by detailed collar records as well as downhole survey QA/QC records.

Drilling at the NE Mango 1 Prospect occurs on nine drill sections spaced approximately 170 to 500 m apart along the strike of mineralisation and one drill section at 1,500 m to the south of the drilling area. There are generally two to three drillholes per section, spaced approximately 40 m across strike drilled at an approximate angle of 60° from horizontal at an azimuth of generally 230° (west-south-west) in order to intersect the plane of mineralisation at a high angle.

Xstrat has reviewed all data provided by DML and confirms that the information is of sufficient quality to support a Mineral Resource for public reporting purposes.

The mineralised zone of the NE Mango 1 Prospect has been interpreted in all sections along the drill section strike length of approximately 4.2 km, and has also been intersected at depths between 30 m to 160 m. Mineralisation is generally dipping at 55° to the northeast, and is constrained within a zone of approximately 10 m thickness. The majority of samples are 1 m in length with core sampling derived from half core intervals and a minimum sampling width of 0.05 m.

DML provided two-dimensional ("2D") surfaces of the base of the oxidation zones (oxidised zone, **transition zone, and fresh rock**) as well as a lithological 'capping' surface demarcating overlying Tertiary to Quaternary, post mineralisation unconsolidated sands, calcrete, etc. of the Kalahari Group.

DML also provided a three-dimensional ("3D") geological interpretation of the mineralisation based primarily on the lithology and copper grades in the drillhole data. Statistical analysis of the copper grades within this mineralised zone identified that a substantial amount of low grade had been included in the interpretation. Further domaining based on geology and copper grades made it possible to delineate consistent higher-grade areas of the deposit at widths likely to be mined. Two mineralised zones were delineated by a cut-off grade of 0.5% Cu and a minimum of four assays (approximately 4 m length) of drillhole intersection. These zones are approximately 2,100 m and 400 m in strike length and extend to depths of 110 m to 230 m. A distinct higher-grade zone was delineated using a cut-off grade of 1.0% Cu within the northern part of the mineralisation for 550 m of strike length. These three zones were analysed separately and the estimation results were combined in the final block model.

Ordinary kriging was used to estimate copper, silver and sulphur into the low grade mineralised lodes and inverse distance squared interpolation was used for the estimation of grades for the higher grade mineralisation. The block model parent cells have dimensions of 40 mE by 80 mN by 10 mRL, with sub-celling employed to accurately represent the geometry and volume of the mineralisation models. The higher-grade zone estimation data has a top cut of 5.0% Cu to limit the effect of overestimation from the negatively skewed data. The estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by variography study of copper, silver and sulphur. The short-range continuity along strike for copper, silver and sulphur was poorly defined due to the wide spaced drilling over the area.



Specific gravity sampling data for NE Mango 1 was used to determine dry bulk density factors for estimating material tonnages. Dry bulk density factors of 2.64 t/m<sup>3</sup> were used for calculating tonnages for capping and oxidised material, 2.67 t/m<sup>3</sup> for partially oxidised ('transition zone') material and 2.70 t/m<sup>3</sup> for fresh rock. Due to the lack of sampling in the oxidised zone, a mineral resource was not estimated in this area.

A Total Inferred Mineral Resource of 4.8 Mt at 1.2% Cu, 13 g/t Ag, and 0.5% S using a block cut-off grade of 0.6% Cu has been reported for the NE Mango 1 Prospect in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The grade and tonnage values listed in Table 1 are an accumulation of blocks above a given cut-off within a portion of the NE Mango 1 Prospect Mineral Resource Estimate block model defined by criteria based on proximity to drillholes and confidence in estimation continuity also listed in Table 2 and Table 3 are the high grade and low grade zone's grade and tonnage values.

**Table 1: NE Mango 1 Prospect Inferred Mineral Resource above a Cu% Grade Cut-off**

<b>Cu cut-off</b>	<b>Tonnes</b>	<b>Cu</b>	<b>Ag</b>	<b>S</b>
(%)	(Mt)	(%)	(g/t)	(%)
0.01	4.8	1.2	13	0.5
0.4	4.8	1.2	13	0.5
0.6	4.8	1.2	13	0.5
0.8	3.5	1.4	16	0.5
1.0	1.7	2.0	23	0.7
1.2	1.6	2.1	25	0.7
1.4	1.6	2.1	25	0.7
1.6	1.5	2.1	25	0.7
1.8	1.5	2.1	25	0.7
2.0	0.9	2.3	26	0.8

**Table 2: NE Mango 1 Prospect Low Grade Inferred Mineral Resource above a Cu% Grade Cut-off**

<b>Cu cut-off</b>	<b>Tonnes</b>	<b>Cu</b>	<b>Ag</b>	<b>S</b>
(%)	(Mt)	(%)	(g/t)	(%)
0.01	3.2	0.8	7	0.4
0.4	3.2	0.8	7	0.4
0.6	3.2	0.8	7	0.4
0.8	1.9	0.9	9	0.4
1.0	0.2	1.0	10	0.5

**Table 3: Mango 1 Prospect High Grade Inferred Mineral Resource above a Cu% Grade Cut-off**

<b>Cu cut-off</b>	<b>Tonnes</b>	<b>Cu</b>	<b>Ag</b>	<b>S</b>
(%)	(Mt)	(%)	(g/t)	(%)
0.01	1.6	2.1	25	0.7
0.4	1.6	2.1	25	0.7
0.6	1.6	2.1	25	0.7
0.8	1.6	2.1	25	0.7
1.0	1.6	2.1	25	0.7
1.2	1.6	2.1	25	0.7
1.4	1.6	2.1	25	0.7
1.6	1.5	2.1	25	0.7
1.8	1.5	2.1	25	0.7
2.0	0.9	2.3	26	0.8
2.2	0.6	2.3	27	0.8
2.4	0.1	2.6	32	1.0

If you have any questions regarding the information above, please do not hesitate to contact me.

Yours sincerely

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## JORC Code, 2012 Edition – Table 1

### Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li><b>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation</b> may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>The DML sampling procedure documentation contains procedures for diamond core and RC chip samples. Diamond core sampling is generally constrained by a minimum sample length of 0.5 m and logged lithological or mineralogical boundaries. The general practice of sampling 3 m before visible copper mineralisation should be reviewed on a project by project basis.</li> <li>Xstract considered sampling to be adequate. Xstract observed during a site visit in October 2012 that the practice of sampling diamond core along the drill orientation line should be changed as cases were observed where half core samples were cut at less than optimal angles to mineralised structures-</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling comprises Reverse Circulation (RC), fully cored diamond drill holes with RC pre-collars and diamond core <b>'tails' in the mineralised</b> zone. Diamond drill holes are either HQ or NQ in size with RC holes 5.5 inches in diameter. Core is orientated so as to intersect mineralisation at a high angle to the dip plane.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Overall recovery was considered by Xstract as reasonable once it was calculated correctly.</li> <li>Holes are re-drilled in transition and fresh rock if core recovery is lower than 30% for a drill string.</li> <li>DML advised Xstract that anomalous low and high (significantly over 100%) recovery values were often associated with low core retrieval <b>in drill runs in poor ground conditions, followed by the 'pick up' of core</b> in a subsequent drill run, resulting in individual core run recovery <b>calculations of greater than 100%. This method of calculating 'core recovery' is actually recording 'core retrieval' and potentially biasing</b> confidence in diamond drill core results. In the past, this has led to the omission of data from resource estimation.</li> <li>Xstract recommends DML review the core recovery data collection procedure to ensure that the recovery percentage recorded is representative of the entire interval. Anomalous core recovery values should be resolved between the driller and rig geologist as close as possible to the time of drilling the interval.</li> <li>Total weights of RC samples should be recorded as a measure of sample recovery from this drilling method.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Overall logging is to a good standard and level of detail</li> <li>The logging procedure documentation provided by DML included general logging principles plus specific diamond core logging and RC chip logging principles.</li> <li>Logging is written onto paper forms and entered into spreadsheets. DML was in the process to migrating to a data management system (aQuire) during the time of the site visit.</li> <li>Limited geotechnical data is logged within cored drillholes in the form of RQD measurements.</li> <li>It was noted during the site review that there appears to be confusion in logging <b>terminology regarding what is meant by 'oxidation'</b>. The current process is to log the degree of weathering down the hole, but also define the degree of <b>'oxidation'</b> based on copper mineralogy.</li> <li>A general logging mark-up practice was recommended to assist in improving the quality and consistency of work.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Core is cut in half and sampled over 1m intervals and split at lithological boundaries. Minimum sampling size is 0.1 m, Xstract recommend this be increased to 0.3 m to improve representatively.</li> <li>Xstract considers sampling and sub-sampling to be of good quality and appropriate for this level of study.</li> <li>RC sampling is conducted at 1 m intervals within mineralisation and are sampled dry. RC sampling was not observed during the site visit but the procedures states that it is cyclone split to a size of 2.5 kg. Samples are then spear or tube sampled.</li> <li><b>DML's drilling procedure strongly suggests that when dry sampling is not possible RC drilling is abandoned in favour of diamond drilling.</b></li> <li>The potential for sample cross-contamination in wet RC sampling is very high and given that mineralisation is generally a few metres wide it is likely to lead to significant estimation risk.</li> </ul>

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Xstrat has reviewed QAQC procedures for DML projects and suggests that procedures are adequate for this level of study.</li> <li>The DML procedure for QAQC field standards, blanks and duplicates is to submit one sample of each type in every 25 samples.</li> <li>Laboratory QC data (internal sample preparation duplicates, grind size passing check, sample preparation blanks, quartz flush analyses, standard analyses, sample weight checks, batch re-assay occurrences) is not obtained or analysed. Xstrat recommends this data is requested, analysed and retained for future Mineral Resource updates.</li> <li>Standards with a more relevant range of silver grades are recommended.</li> <li>Due to the narrow and planar nature of mineralisation field and laboratory duplicate strategy could be amended to increase the number of QC samples in mineralisation in order to provide a reasonable basis for evaluating sampling and laboratory procedures.</li> <li>DML should request Genalysis to introduce the use of quartz flushes between grinding DML samples as soon as possible.</li> <li>Blanks are submitted as pulps. Coarse material blanks samples should be introduced as part of the QAQC system to test for contamination in sample preparation.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> <li>Xstrat recommends a database audit be undertaken once the database migration is complete</li> <li>Some minor verification of logging and assay results was undertaken during the site visit but it was numerous enough to be representative</li> <li>No twinned holes have been used within the NE Mango 1 Project.</li> </ul>



Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Drillhole collar positions were surveyed using OmniLogger Differential GPS (DGPS) from OmniSTAR's Global Positioning System products. The DGPS has a stated accuracy of <math>\pm 50</math> cm.</li> <li>A Reflex Ez-Trac<sup>TM</sup> instrument was used to record downhole survey measurements.</li> <li>Spatial coordinates for the Boseto prospects were supplied in World Geodetic System 1984, Zone 34 Southern Hemisphere (WGS84_34S). A translation to the DML Local Mine Grid (DML LG) provided by DML allowed for the deposits to be modelled with the mineralisation strike aligned to a grid north – south orientation</li> <li>A variation in the order of tens of metres between survey relative levels (RL) and that of surface topography is noted. DML has adjusted hole collar positions to surface topography for Mineral Resource modelling due to the very flat terrain. DML mine surveyors have a method for resolving these differences accurately and it is recommended the exploration division adopt these procedures for past and future surveys</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Data spacing at 400 m to 800 m along strike is currently within limits of geological continuity but at or beyond the limit of copper, silver and sulphur grade continuity. Xstract recommends a component of infill drilling should target definition of grade continuity at a range of sample spacing that will define shorter range grade relationships and assist in detecting mineralisation controls (e.g. plunges). This will improve confidence in Mineral Resource estimation and make it possible to optimise drill spacing for project development objectives.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Sample security is managed with dispatch dates noted for each samples by the core technician, this is checked and confirmed at the laboratory on receipt of samples and discrepancies are corrected via telephone link up with laboratory and project geologist.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling techniques and data site audit occurred in October 2012. No information regarding previous audits was available.</li> </ul>

## Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The NE Mango 1 prospecting licence (PL099/2005) falls within a group of seven prospecting licences located in Ngamiland district, all of which expired September 2012.</li> <li>The license for the area that covers the NE Mango 1 Prospect has currently been extended by the Botswana Department of Minerals, Energy and Water Resources whilst the renewal application is being considered. No third party has access to the area until the application finalised.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencore International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold</li> <li>DML exploration data is the only data used in resource estimation.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The NE Mango 1 Prospect is located in Ngamiland, within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the NE Mango 1 Prospect is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopryite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A list of drillholes used with relevant information is within Appendix A of the report.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>This section is not relevant as data is composited for Mineral Resource estimation (Section 3).</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Images of mineralisation shown in Figure 7-1, 7-2 and 7-3.</li> </ul>

Criteria	JORC Code explanation	Commentary
Balanced reporting	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Individual Exploration Results are not being reported so this section is not relevant to Mineral Resource reporting.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>All available exploration data is included and documented in Mineral Resource reporting.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Details of planned further work were unknown at the time of the Mineral Resource reporting.</li> </ul>

### Section 3: Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>DML were migrating their drilling database from Microsoft (MS) Access to an acQuire software system during October 2012. Once the database migration is completed Xstract recommends a database validation be undertaken.</li> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A Competent Person site visit was undertaken by Matthew Readford during October 2012. This included visits to the Zeta mining operation, all Boesto exploration areas and assay laboratories (ALS Chemex laboratory, Johannesburg and Genalysis Intertek, Johannesburg and Perth).</li> </ul>



Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is generally consistent along strike for many kilometres and down-dip below deepest drilling.</li> <li>The mineralisation was interpreted on drill sections by Xstrat for Mineral Resource estimation based on geology logs and copper grades in order to delineate consistent higher-grade areas of the deposit at widths likely to be mined (This equated to approximately four metres or 4 x 1 metre samples downhole based on drillholes dipping at 60 degrees.).</li> <li>In most cases, two to three drill intersections were available to define mineralisation boundaries on any given section. The mineralisation was modelled to a maximum depth of 230 m below the surface topography.</li> <li>The mineralisation must maintain an overall downhole composite that reported a copper grade of greater than 0.5% Cu.</li> <li>Mineralisation outlines were terminated at half the drillhole spacing beyond the last known section of copper mineralisation.</li> <li>Where copper mineralisation appeared to extend past the last downhole intersection on a section, the copper mineralisation was extended for a distance equal to the general down-dip drill spacing.</li> <li>Assay data from within mineralisation wireframes was composited to the mode sample length of 1 m for analysis and estimation. The compositing routine respects the boundaries of the mineralisation domains but also optimises lengths so the majority are as close as possible to 1 m.</li> <li>At this stage of project development the wide-spaced drilling demonstrates reasonable geological continuity of mineralisation along strike and down-dip but variography suggests that grade continuity for copper, silver and sulphur generally needs to be defined by infill drilling.</li> <li>A base of oxidation surface was also interpreted from drill sections and extended laterally beyond the limits of the Mineral Resource model</li> <li>The mineralisation wireframes were constructed from interpretations on 9 east-west drill sections spaced between 200 m and 500 m apart</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>Xstrat interpreted three mineralised domains, two low grade and one high grade. The main low grade domain has a total strike length of 2.1 km and the secondary footwall low grade domain has a 400 m strike length. The high grade domain is within the northern section of the main low grade domain and extends along a strike for 550 m. Domains extend to depths of 110 m to 230 m</li> </ul>

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>A top cut of 5.0% Cu was applied to the copper data composites to limit the effect of high grade outliers located at depth creating an artificial high grade bias in areas where block grades were extrapolated beyond drilling.</li> <li>Ordinary Kriging interpolation was used to estimate the grades into model blocks of 40 mE by 80 mN by 10mRL in size for copper, silver and sulphur in the mineralised domain. Drill section spacing is 200 m to 500 m apart and 40 m down-dip.</li> <li>Whilst there is a correlation between copper, silver and sulphur each element was estimated independently from the same or similar numbers of data</li> <li>Sub-celling was employed to accurately represent model volumes down to 5 mE by 10 mN by 0.5 mRL. Each sub-cell within the mineralisation outline was assigned the grade values of the parent cell.</li> <li>Software used in resource estimation was CAE Mining, Datamine software.</li> <li>Estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by the variography study. An anisotropic, elliptical search neighbourhood was orientated according to the modelled directions of grade continuity for copper, which generally correlate with the mineralisation strike and dip.</li> <li>Data density is not sufficient to model grade variation across the mineralisation width; geological modelling is currently simulating a mining cut-off envelope. Infill drilling is required to allow for more confident modelling of mineralisation volume and to make it possible to determine grade variation across strike and to a scale indicative of selective mining units along strike and down-dip.</li> <li>Search ranges for all elements were adjusted in order to ensure a reasonable number of samples were included in each block estimate and so data in the dip and across-dip direction <b>was not 'screened out' by the high dimensional ratios between strike and dip directions and the narrow across-dip width of mineralisation.</b></li> <li>A minimum of 3 and maximum of 10 samples were used in the estimation of each block grade.</li> <li>A comparison between the mean grades from the drillhole composite data and the block estimates (on a parent cell basis) was performed to ensure they were similar and the estimate unbiased in a global sense.</li> <li>Local validation of the estimates was performed by visually inspecting the block model in plan sections, long sections and cross sections. The quality of the local estimates was checked by averaging block grades and composite data for copper, silver and sulphur both along strike and down dip.</li> </ul>

Criteria	JORC Code explanation	Commentary
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal 0.6% Cu lower cut-off is used for reporting the mineral resource on the basis of what is used for the nearby Zeta open pit mining operation.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Mining studies for the NE Mango 1 Prospect have not been carried out to determine optimal open pit and underground grade cut-offs. The Mineral Resources are considered to be amenable to extraction by open pit mining at this stage and modelling does not extend to sufficient depth to report a section of the Mineral Resource above a higher grade cut-off expected to be relevant to underground mining.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical assessment is recommended to confirm the assumptions made in the reporting of Mineral Resources that oxidised copper material is not economical to process.</li> <li>Different trends in NE Mango 1 copper:sulphur ratios indicate that metallurgical assumptions from mining the Zeta pit should be tested for NE Mango 1.</li> </ul>

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>No environmental impact study has been completed at this initial stage of Mineral Resource estimation. Current assumptions of similarity to the nearby Zeta NE open pit operations and treatment at the established Boseto Copper concentrator mean there is no apparent material environmental impact on exploitation of this Mineral Resource at this stage.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Specific gravity measurements were taken from drill core were grouped into oxidation domains defined in the geological model and mean values were used as a dry bulk density factor on this basis.</li> <li>A bulk density factor of 2.64 t/m<sup>3</sup> was used for oxidised material due to lack of sufficient sampling. This value was derived from open pit mining of the Zeta deposit..</li> <li>Estimation of bulk density factors from specific gravity sampling can be improved through more representative sampling of weathered zones and incorporating geological domain interpretations for lithology and weathering.</li> </ul>

Criteria	JORC Code explanation	Commentary
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the <b>Competent Person's view of the deposit.</b></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource has been classified as Inferred due to the current, early stages of project development where data density is typically beyond grade continuity along strike and key areas of spatial location and QAQC require further investigation and issue resolution.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Xstract has completed an internal peer review of this estimate and report.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>As this is a 'maiden' Mineral Resource the prospect is in early stages of project development where data density is typically beyond grade continuity. Estimates do not model local grade variability across the mineralisation and only broadly along strike and down dip. Overall estimation accuracy is relatively low compared to projects sampled sufficiently to warrant a detailed mining study.</li> <li>No studies have been undertaken to quantify the accuracy and confidence of the estimate.</li> <li>Metallurgical and mining studies have also not been undertaken to evaluate the which proportion of this Mineral Resource may be economic</li> </ul>



## Memorandum

**Company:** Discovery Metals Ltd  
**Sender/author:** Matthew Readford  
**Date:** 21 June 2013  
**Project reference:** P1794  
**Subject:** North East Mango 2 Mineral Resource Estimate update to the JORC Code (2012)

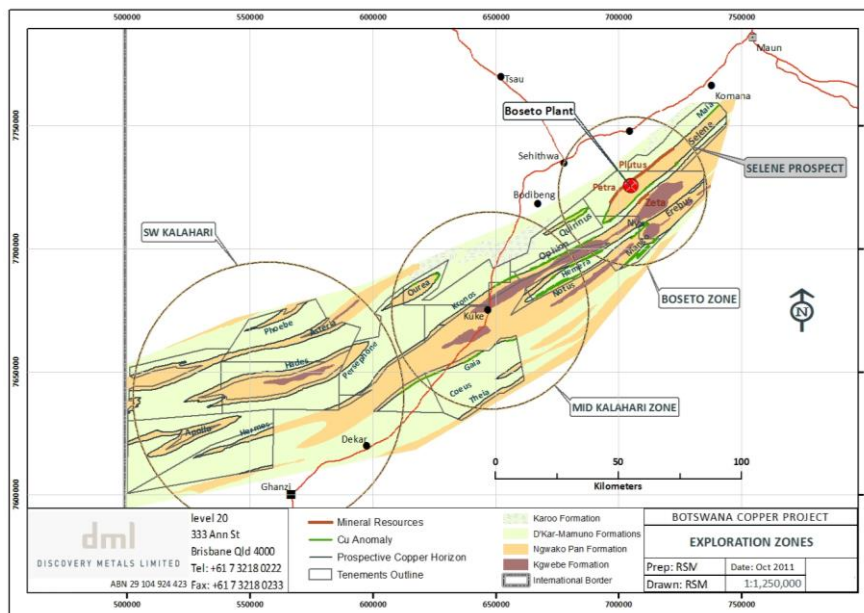
Dear Discovery Metals Ltd

Xstract Mining Consultants Pty Ltd ("Xstract") reported a 'maiden' Mineral Resource Estimate for the NE Mango 2 copper and silver prospect according to guidelines of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, 2004 Edition (The JORC Code, 2004) for Discovery Metals Ltd ("DML") on 20<sup>th</sup> November 2012. This Mineral Resource Statement and a supporting Mineral Resource Report updates the reporting of this Mineral Resource to JORC 2012 edition guidelines. This resource statement has an effective date of 21 June 2013.

The NE Mango 2 copper and silver project ("NE Mango 2") is located in Ngamiland within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana, some 80 km southwest of the town of Maun. NE Mango 2 forms part of DML's 100% owned Boseto Copper Project and is located within the southeast of the Boseto Zone (Figure 1).

The Botswana Government has extended DML's prospect license covering NE Mango 1 beyond the September 2011 expiry until such time that it completes processing DML's renewal application.

**Figure 1: Location of NE Mango 2 Prospect in the Boseto Zone**



Source: Discovery Metals Limited

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**XstractGroup.com**

As with other known deposits of the Boseto Copper Project, the mineralisation style of the NE Mango 2 deposit is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.

DML undertook exploration drilling of the NE Mango 2 Prospect during 2012. Drilling comprises 45 drillholes, totalling 6,580 m. All of these drillholes are reverse circulation ("RC") with diamond drilling ("DD") through the mineralisation. All were located in the area modelled for Mineral Resource estimation. Drillholes are supported by detailed collar records as well as downhole surveys and QA/QC data.

The NE Mango 2 Prospect has been drilled on 15 drill sections spaced approximately 200 m to 1,000 m apart along the strike of mineralisation. There are between one to three drillholes per section, spaced approximately 25 m to 80 m across strike. They are mostly drilled at an angle of 50° to 60° from horizontal at an azimuth of 140° (east-south-east) in order to intersect the plane of mineralisation at a high angle. The majority of samples are 1 m in length with core sampling derived from half core intervals. Xstrat has reviewed all data provided by DML and confirms that the information used for modelling is of sufficient quality to support a Mineral Resource for public reporting purposes.

The mineralised zone of the NE Mango 2 Prospect has been interpreted from 15 drillhole sections mostly spaced 400 m apart, with one section in the north interpreted over 1,000 m, for a total strike length of 6.6 km. Mineralisation is generally dipping at 80° to the northwest, intersected at depths between 30 m to 250 m and is constrained within a zone approximately 2 m to 5 m thick. Mineralisation appears to be open at depth and along strike. An igneous dyke has been intersected by one drillhole in the northern half of the prospect. This feature has been interpreted to be 50 m thick and not mineralised.

There is a thickening of the mineralisation up to 16 m for a strike length of 1 km in the central portion of the Prospect. At this early stage of project development, delineation of a separate high grade mineralisation zone is not practical.

DML provided interpretations of surfaces of the base of complete and partial copper oxidation, **and the 'capping' surface** of overlying Tertiary to Quaternary, post mineralisation, unconsolidated sands and calcrete of the Kalahari Group. DML also provided a three-dimensional ("3D") geological interpretation of the mineralisation based primarily on the lithology and copper grades in the drillhole data. The mineralised domain was modified by Xstrat to create spatially consistent areas of the deposit at widths likely to be mined.

Ordinary kriging was used to estimate copper, silver and sulphur into a block model of the mineralisation wireframe. The block model parent cells have dimensions of 40 mE by 80 mN by 40 mRL, with sub-celling employed to represent the geometry and volume of the mineralisation models. The estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by variography study of copper, silver and sulphur. The short-range continuity along strike for copper, silver and sulphur is poorly defined due to the wide-spaced drilling over the area.

Specific gravity sampling data for the NE Mango 2 Prospect was used to determine dry bulk density factors for estimating material tonnages. Dry bulk density factors of 2.58 t/m<sup>3</sup> were used for calculating tonnages for capping and oxidised copper material, 2.68 t/m<sup>3</sup> for partially oxidised **copper ('transition zone') material** and 2.70 t/m<sup>3</sup> for fresh rock. A mineral resource is not estimated in the oxidised copper zone due to both a lack of sampling and, based on the Zeta deposit, that it is possibly uneconomic to process.



A total Inferred Mineral Resource of 28.5 Mt at 1.3% Cu, 14 g/t Ag, and 0.8% S using a lower block cut-off grade of 0.6% Cu has been reported for the NE Mango 2 Prospect in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The grade and tonnage values listed in Table 1 are an accumulation of blocks above a given cut-off within a portion of the NE Mango 2 Project Mineral Resource Estimate block model defined by criteria based on proximity to drillholes and confidence in estimation continuity.

**Table 1: NE Mango 2 Project Inferred Mineral Resource above a lower Cu (%) Grade Cut-off**

<b>Cu cut-off (%)</b>	<b>Tonnes (Mt)</b>	<b>Cu (%)</b>	<b>Ag (g/t)</b>	<b>S (%)</b>
0.01	29.1	1.3	14	0.8
0.6	28.5	1.3	14	0.8
0.8	26.5	1.4	14	0.9
1.0	20.8	1.5	16	1.0
1.2	15.2	1.7	18	1.1

If you have any questions regarding the information above, please do not hesitate to contact me.

Yours sincerely

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# 1 JORC Code, 2012 Edition – Table 1

## Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li><b>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</b></li> </ul>	<ul style="list-style-type: none"> <li>The DML sampling procedure documentation contains procedures for diamond core and RC chip samples. Diamond core sampling is generally constrained by a minimum sample length of 0.5 m and logged lithological or mineralogical boundaries. The general practice of sampling 3 m before visible copper mineralisation should be reviewed on a project by project basis.</li> <li>Xstract considered sampling to be adequate. Xstract observed during a site visit in October 2012 that the practice of sampling diamond core along the drill orientation line should be changed as cases were observed where half core samples were cut at less than optimal angles to mineralised structures-</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul style="list-style-type: none"> <li>Drilling comprises Reverse Circulation (RC), fully cored diamond drill holes with RC pre-collars and diamond core <b>'tails' in the mineralised zone</b>. Diamond drill holes are either HQ or NQ in size with RC holes 5.5 inches in diameter. Core is orientated so as to intersect mineralisation at a high angle to the dip plane.</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Overall recovery was considered by Xstrat as reasonable once it was calculated correctly.</li> <li>Holes are re-drilled in transition and fresh rock if core recovery is lower than 30% for a drill string.</li> <li>DML advised Xstrat that anomalous low and high (significantly over 100%) recovery values were often associated with low core retrieval <b>in drill runs in poor ground conditions, followed by the 'pick up' of core</b> in a subsequent drill run, resulting in individual core run recovery <b>calculations of greater than 100%. This method of calculating 'core recovery' is actually recording 'core retrieval' and potentially biasing</b> confidence in diamond drill core results. In the past, this has led to the omission of data from resource estimation.</li> <li>Xstrat recommends DML review the core recovery data collection procedure to ensure that the recovery percentage recorded is representative of the entire interval. Anomalous core recovery values should be resolved between the driller and rig geologist as close as possible to the time of drilling the interval.</li> <li>Total weights of RC samples should be recorded as a measure of sample recovery from this drilling method.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Overall logging is to a good standard and level of detail</li> <li>The logging procedure documentation provided by DML included general logging principles plus specific diamond core logging and RC chip logging principles.</li> <li>Logging is written onto paper forms and entered into spreadsheets. DML was in the process to migrating to a data management system (aQuire) during the time of the site visit.</li> <li>Limited geotechnical data is logged within cored drillholes in the form of RQD measurements.</li> <li>It was noted during the site review that there appears to be confusion in logging <b>terminology regarding what is meant by 'oxidation'</b>. The current process is to log the degree of weathering down the hole, but also <b>define the degree of 'oxidation'</b> based on copper mineralogy.</li> <li>A general logging mark-up practice was recommended to assist in improving the quality and consistency of work.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Core is cut in half and sampled over 1m intervals and split at lithological boundaries. Minimum sampling size is 0.1 m, Xstract recommend this be increased to 0.3 m to improve representivity.</li> <li>Xstract considers sampling and sub-sampling to be of good quality and appropriate for this level of study.</li> <li>RC sampling is conducted at 1 m intervals within mineralisation and are sampled dry. RC sampling was not observed during the site visit but the procedures states that it is cyclone split to a size of 2.5 kg. Samples are then spear or tube sampled.</li> <li><b>DML's drilling procedure strongly suggests that when dry sampling is not possible RC drilling is abandoned in favour of diamond drilling.</b></li> <li>The potential for sample cross-contamination in wet RC sampling is very high and given that mineralisation is generally a few metres wide it is likely to lead to significant estimation risk.</li> </ul>

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Xstrat has reviewed QAQC procedures for DML projects and suggests that procedures are adequate for this level of study.</li> <li>The DML procedure for QAQC field standards, blanks and duplicates is to submit one sample of each type in every 25 samples.</li> <li>Laboratory QC data (internal sample preparation duplicates, grind size passing check, sample preparation blanks, quartz flush analyses, standard analyses, sample weight checks, batch re-assay occurrences) is not obtained or analysed. Xstrat recommends this data is requested, analysed and retained for future Mineral Resource updates.</li> <li>Standards with a more relevant range of silver grades are recommended.</li> <li>Due to the narrow and planar nature of mineralisation field and laboratory duplicate strategy could be amended to increase the number of QC samples in mineralisation in order to provide a reasonable basis for evaluating sampling and laboratory procedures.</li> <li>DML should request Genalysis to introduce the use of quartz flushes between grinding DML samples as soon as possible.</li> <li>Blanks are submitted as pulps. Coarse material blanks samples should be introduced as part of the QAQC system to test for contamination in sample preparation.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> <li>Xstrat recommends a database audit be undertaken once the database migration is complete</li> <li>Some minor verification of logging and assay results was undertaken during the site visit but it was numerous enough to be representative</li> <li>No twinned holes have been used within the NE Mango 2 Project.</li> </ul>

Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> <li>• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• Drillhole collar positions were surveyed using OmniLogger Differential GPS (DGPS) from OmniSTAR's Global Positioning System products. The DGPS has a stated accuracy of <math>\pm 50</math> cm.</li> <li>• A Reflex Ez-Trac<sup>TM</sup> instrument was used to record downhole survey measurements.</li> <li>• Spatial coordinates for the Boseto prospects were supplied in World Geodetic System 1984, Zone 34 Southern Hemisphere (WGS84_34S). A translation to the DML Local Mine Grid (DML LG) provided by DML allowed for the deposits to be modelled with the mineralisation strike aligned to a grid north – south orientation</li> <li>• A variation in the order of tens of metres between survey relative levels (RL) and that of surface topography is noted. DML has adjusted hole collar positions to surface topography for Mineral Resource modelling due to the very flat terrain. DML mine surveyors have a method for resolving these differences accurately and it is recommended the exploration division adopt these procedures for past and future surveys</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• Data spacing for reporting of Exploration Results.</li> <li>• Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>• Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>• Data spacing at 200 m to 400 m along strike is currently within limits of geological continuity but at or beyond the limit of copper, silver and sulphur grade continuity. Xstract recommends a component of infill drilling should target definition of grade continuity at a range of sample spacing that will define shorter range grade relationships and assist in detecting mineralisation controls (e.g. plunges). This will improve confidence in Mineral Resource estimation and make it possible to optimise drill spacing for project development objectives.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>• If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>• In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Sample security is managed with dispatch dates noted for each samples by the core technician, this is checked and confirmed at the laboratory on receipt of samples and discrepancies are corrected via telephone link up with laboratory and project geologist.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling techniques and data site audit occurred in October 2012. No information regarding previous audits was available.</li> </ul>



## Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>The NE Mango 2 prospecting licence (PL099/2005) falls within a group of seven prospecting licences located in Ngamiland district, all of which expired September 2012.</li> <li>The license for the area that covers the NE Mango 2 Prospect has currently been extended by the Botswana Department of Minerals, Energy and Water Resources whilst the renewal application is being considered. No third party has access to the area until the application finalised.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencore International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold</li> <li>DML exploration data is the only data used in resource estimation.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The NE Mango 2 Prospect is located in Ngamiland, within the Ghanzi-Chobe Fold Belt (informally known as the Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the NE Mango 2 Prospect is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopryrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena</li> </ul>

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A list of drillholes used with relevant information is within Appendix A of the report.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>This section is not relevant as data is composited for Mineral Resource estimation (Section 3).</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there <b>should be a clear statement to this effect (eg 'down hole length, true width not known')</b>.</li> </ul>	<ul style="list-style-type: none"> <li>In general, the drilling orientation is at a high angle to the geological structures controlling mineralisation result in limited sampling bias.</li> </ul>

Criteria	JORC Code explanation	Commentary
Diagrams	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Images of mineralisation shown in Figure 7-1 and 7-2.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>Individual Exploration Results are not being reported so this section is not relevant to Mineral Resource reporting.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>All available exploration data is included and documented in Mineral Resource reporting.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Details of planned further work were unknown at the time of the Mineral Resource reporting.</li> </ul>

### Section 3: Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>DML were migrating their drilling database from Microsoft (MS) Access to an acQuire software system during October 2012. Once the database migration is completed Xstract recommends a database validation be undertaken.</li> <li>Senior geologists have been validating anomalous database records against logging and assay submission as part of a database migration</li> <li>Data storage and validation protocols were not in place due to the change to a new system</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A Competent Person site visit was undertaken by Matthew Readford during October 2012. This included visits to the Zeta mining operation, all Boesto exploration areas and assay laboratories (ALS Chemex laboratory, Johannesburg and Genalysis Intertek, Johannesburg and Perth).</li> </ul>

Criteria	JORC Code explanation	Commentary
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Mineralisation is generally consistent along strike for many kilometres and down-dip below deepest drilling.</li> <li>The mineralisation was interpreted on drill sections by Xstract for Mineral Resource estimation based on geology logs and copper grades in order to delineate consistent higher-grade areas of the deposit at widths likely to be mined (This equated to approximately four metres or 4 x 1 metre samples downhole based on drillholes dipping at 60 degrees.).</li> <li>In most cases, two to three drill intersections were available to define mineralisation boundaries on any given section. The mineralisation was modelled to a maximum depth of 230 m below the surface topography.</li> <li>The mineralisation must maintain an overall downhole composite that reported a copper grade of greater than 0.3% Cu.</li> <li>Mineralisation outlines were terminated at half the drillhole spacing beyond the last known section of copper mineralisation.</li> <li>Where copper mineralisation appeared to extend past the last downhole intersection on a section, the copper mineralisation was extended for a distance equal to the general down-dip drill spacing.</li> <li>Assay data from within mineralisation wireframes was composited to the mode sample length of 1 m for analysis and estimation. The compositing routine respects the boundaries of the mineralisation domains but also optimises lengths so the majority are as close as possible to 1 m.</li> <li>At this stage of project development the wide-spaced drilling demonstrates reasonable geological continuity of mineralisation along strike and down-dip but variography suggests that grade continuity for copper, silver and sulphur generally needs to be defined by infill drilling.</li> <li>A base of oxidation surface was also interpreted from drill sections and extended laterally beyond the limits of the Mineral Resource model</li> <li>The mineralisation wireframes were constructed from interpretations on 15 east-west drill sections spaced between 200 m and 400 m apart</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation wireframes cover a strike distance of approximately 6.6 km and extend to 250 m below surface.</li> </ul>

Criteria	JORC Code explanation	Commentary
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>Top cuts (5.5% Cu, 80 g/t Ag and 2.5% S) were applied to the three elements of the data composites to limit the effect of high grade outliers located at depth creating an artificial high grade bias in areas where block grades were extrapolated beyond drilling.</li> <li>Ordinary Kriging interpolation was used to estimate the grades into model blocks of 40 mE by 80 mN by 40mRL in size for copper, silver and sulphur in the mineralised domain. Drill section spacing is 200 m to 400 m apart and between 25m and 80 m down-dip.</li> <li>Whilst there is a correlation between copper, silver and sulphur each element was estimated independently from the same or similar numbers of data</li> <li>Sub-celling was employed to accurately represent model volumes down to 1 mE by 2 mN by 1 mRL. Each sub-cell within the mineralisation outline was assigned the grade values of the parent cell.</li> <li>Software used in resource estimation was CAE Mining, Datamine software.</li> <li>Estimation parameters were optimised based on the drillhole data spacing and the models of grade continuity produced by the variography study. An anisotropic, elliptical search neighbourhood was orientated according to the modelled directions of grade continuity for copper, which generally correlate with the mineralisation strike and dip.</li> <li>Data density is not sufficient to model grade variation across the mineralisation width; geological modelling is currently simulating a mining cut-off envelope. Infill drilling is required to allow for more confident modelling of mineralisation volume and to make it possible to determine grade variation across strike and to a scale indicative of selective mining units along strike and down-dip.</li> <li>Search ranges for all elements were adjusted in order to ensure a reasonable number of samples were included in each block estimate and so data in the dip and across-dip direction <b>was not 'screened out' by the high dimensional ratios between strike and dip directions and the narrow across-dip width of mineralisation.</b></li> <li>A minimum of 4 and maximum of 24 samples were used in the estimation of block grades.</li> <li>A comparison between the mean grades from the drillhole composite data and the block estimates (on a parent cell basis) was performed to ensure they were similar and the estimate unbiased in a global sense.</li> <li>Local validation of the estimates was performed by visually inspecting the block model in plan sections, long sections and cross sections. The quality of the local estimates was checked by averaging block grades and composite data for copper, silver and sulphur both along strike and down dip.</li> </ul>

Criteria	JORC Code explanation	Commentary
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal 0.6% Cu lower cut-off is used for reporting the mineral resource on the basis of what is used for the nearby Zeta open pit mining operation.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Mining studies for the NE Mango 2 Prospect have not been carried out to determine optimal open pit and underground grade cut-offs. The Mineral Resources are considered to be amenable to extraction by open pit mining at this stage and modelling does not extend to sufficient depth to report a section of the Mineral Resource above a higher grade cut-off expected to be relevant to underground mining.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical assessment is recommended to confirm the assumptions made in the reporting of Mineral Resources that oxidised copper material is not economical to process.</li> <li>Different trends in NE Mango 2 copper:sulphur ratios indicate that metallurgical assumptions from mining the Zeta pit should be tested for NE Mango 2.</li> </ul>



Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>No environmental impact study has been completed at this initial stage of Mineral Resource estimation. Current assumptions of similarity to the nearby Zeta NE open pit operations and treatment at the established Boseto Copper concentrator mean there is no apparent material environmental impact on exploitation of this Mineral Resource at this stage.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Specific gravity measurements were taken from drill core were grouped into oxidation domains defined in the geological model and mean values were used as a dry bulk density factor on this basis.</li> <li>A bulk density factor of 2.58 t/m<sup>3</sup> was used for oxidised material due to lack of sufficient sampling. This value was derived from open pit mining of the Zeta deposit..</li> <li>Estimation of bulk density factors from specific gravity sampling can be improved through more representative sampling of weathered zones and incorporating geological domain interpretations for lithology and weathering.</li> </ul>

Criteria	JORC Code explanation	Commentary
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the <b>Competent Person's view of the deposit.</b></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource has been classified as Inferred due to the current, early stages of project development where data density is typically beyond grade continuity along strike and key areas of spatial location and QAQC require further investigation and issue resolution.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Xstract has completed an internal peer review of this estimate and report.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>As this is a <b>'maiden'</b> Mineral Resource the prospect is in early stages of project development where data density is typically beyond grade continuity. Estimates do not model local grade variability across the mineralisation and only broadly along strike and down dip. Overall estimation accuracy is relatively low compared to projects sampled sufficiently to warrant a detailed mining study.</li> <li>No studies have been undertaken to quantify the accuracy and confidence of the estimate.</li> <li>Metallurgical and mining studies have also not been undertaken to evaluate the which proportion of this Mineral Resource may be economic</li> </ul>

# Statement of Open Cut Ore Reserves for Plutus and Zeta as at 30 June 2014

Compliant with the JORC Code (2012)

Discovery Metals Limited





Job No: ADV-PE-60311

Date: September 2013



# Document Control Sheet

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## Executive Summary

RungePincockMinarco Ltd (“RPM”) was commissioned by Discovery Metals Limited (“DML”) to complete an independent estimate (the “Statement”) of the Open Cut Ore Reserves for the Plutus and Zeta Deposits (the “Deposits”) located at DML’s Boseto Operation. The Statement reports the Reserves as at 30 June 2014 and has been undertaken in compliance with the requirements of the reporting guidelines of the 2012 Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (“The JORC Code”).

The Boseto Operation comprised of open pit mines is located approximately 80 km southwest from the town of Maun in northwest Botswana (Africa) and is owned by DML. The mineralisation is located in a series of upright folds, steeply dipping to the north-west.

A mine plan (the “Study”) has been developed in order to support the declaration of an Ore Reserves estimate. The mine plan demonstrates that the Ore Reserves are technically achievable and economically viable. As mining from Plutus and Zeta open pits is currently in progress, the development of the Study has been supported and validated by recent operational data supplied by DML. Based on this Study, modifying factors as stated below have been used to convert a subset of the reported Measured and Indicated Mineral Resources into Ore Reserves.

The information presented in the Executive Summary relates to the “Statement of Open Cut Ore Reserves for Plutus and Zeta”, and is based on information compiled and reviewed by **Mr Joe McDiarmid**, who is a Chartered Professional Member of the Australasian Institute of Mining and Metallurgy, and is an employee of RPM. Mr Joe McDiarmid has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person, as defined in the 2012 Edition of the Australasian Code for the Reporting of Mineral Resources and Ore Reserves.

The Measured and Indicated Mineral Resources are estimated to be **27.9 Mt at 1.3% Cu and 17 ppm Ag**, comprising **7.3 Mt at 1.3% Cu and 14 ppm Ag** of Measured Mineral Resources and **20.6 Mt at 1.3% Cu and 17 ppm Ag** of Indicated Mineral Resources. The Mineral Resources for the Plutus and Zeta were reported by Quantitative Group (QG) as at 30 June 2014.

The Mineral Resources have been converted to Ore Reserves by means of a Life of Mine plan including economic assessment. To define the economic pit limits the geological model was imported into Whittle 4X pit optimisation software (“Whittle 4X”). The pit optimisation was run with revenue generated only by Measured and Indicated Resources. No value was allocated to Inferred Resources. Other key inputs to Whittle 4X were estimates of the mining costs, process plant metal recovery, geotechnical design criteria and metal selling price. A copper price of US\$7,000/t and silver price of US\$20/oz were used for generating the pit limits and confirming their viability.

A mine design was developed for each pit using the Whittle 4X shell. In total there are six pits: one at Zeta; and five along strike at Plutus.

The cut-off grade is based on the economic parameters developed for the Operation. The cut-off grade varies due to the change in metallurgical recovery (as the ratio of acid soluble copper to total copper varies).

DML has received the relevant Mining License from the government of the Republic of Botswana (Mining License No. 2010/99L), which is valid until 19 December 2025. This license covers the area incorporating the Zeta Open Pit and Underground Mines, the Plutus Open Pits, associated waste dumps and haul roads, the plant and tailings facility, and offices.

A total of **8.0<sup>1</sup> Mt** of Open Cut Ore Reserves at 1.2% TCu were estimated for Plutus and Zeta which are categorised Proved and Probable (see **Table ES 1**). The in situ ore quantities within the ultimate pit design were adjusted for mining loss and dilution in order to generate the Ore Reserve. The Plutus Pit contains **6.6 Mt** of Open Cut Ore Reserves (see **Table ES 2**) and the Zeta Pit contains **1.3 Mt** of Open Cut Ore Reserves (**Table ES 3**).

<sup>1</sup> Note total may not reflect sum of individual pits due to rounding.

Table ES.1 – Summary of Open Cut Ore Reserves for Plutus and Zeta

Classification	Tonnes	Total Copper Grade (%)	Acid Soluble Cu Grade (%)	Ag Grade (ppm)
Probable	3,100,000	1.30	0.29	14
Proved	4,900,000	1.20	0.30	13
<b>Proven + Probable</b>	<b>8,000,000</b>	<b>1.20</b>	<b>0.30</b>	<b>14</b>

Notes: Estimates have been rounded to two significant figures to reflect accuracy.

All the estimates are on dry tonne basis.

Table ES.2 - Open Cut Ore Reserves for Plutus

Classification	Tonnes	Total Copper Grade (%)	Acid Soluble Cu Grade (%)	Ag Grade (ppm)
Probable	3,000,000	1.30	0.30	14
Proved	3,700,000	1.20	0.34	11
<b>Proved + Probable</b>	<b>6,600,000</b>	<b>1.20</b>	<b>0.32</b>	<b>12</b>

Notes: Estimates have been rounded to two significant figures to reflect accuracy.

All the estimates are on dry tonne basis.

Table ES.3 – Summary of Open Cut Ore Reserves for Zeta

Classification	Tonnes	Total Copper Grade (%)	Acid Soluble Cu Grade (%)	Ag Grade (ppm)
Probable	140,000	1.20	0.19	23
Proved	1,200,000	1.20	0.20	20
<b>Proved + Probable</b>	<b>1,300,000</b>	<b>1.20</b>	<b>0.20</b>	<b>20</b>

Notes: Estimates have been rounded to two significant figures to reflect accuracy.

All the estimates are on dry tonne basis.

**Mineral Resources are reported inclusive of Ore Reserves (that is, Ore Reserves are not additional to Mineral Resources).**

This Statement may only be presented in its entirety. Parties wishing to publish or edit selected parts of the text, or use the Statement for public reporting, must obtain prior written approval from PRM and the signatories of this Statement.



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## 1. Introduction

RungePincokMinarco Limited (RPM) was commissioned by Discovery Metals Limited (“DML” or the “Client”) to complete an independent estimate (the “Statement”) of the Open Cut Ore Reserves for the Plutus and Zeta Deposits (the “Mine”). The Statement estimates the Ore Reserves as at 30th June 2014 and has been undertaken in compliance with the requirements of the reporting guidelines of the 2012 Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (“JORC Code”).

Discovery Metals was incorporated in 2003 and acquired the Boseto Copper Deposits (“Boseto Operation”) in 2005. The Zeta and Plutus Open Pits are a part of the Boseto Operation, and have been in operation since 2012. A Definitive Feasibility Study (DFS) into an underground operation at Zeta was completed in 2012.

The Boseto Operation is located approximately 80 km southwest from the town of Maun in northwest Botswana (Africa).

This Statement is based on the Mineral Resource estimates for Boseto Copper Operation prepared by Quantitative Group (QG) in September 2014.

### 1.1 Terminology

RPM has adopted the following JORC terms for the reporting of Mineral Resources and Ore Reserves:

- **Mineral Resources** as used in this Statement are the same as “Mineral Resource” as defined in the JORC Code. “Geological Resources” and “In Situ Resources” are also common terms used in the industry to refer to Mineral Resources;
- **Measured, Indicated and Inferred Resources** are categories of Mineral Resources and are defined in the JORC Code to reflect the level of confidence in the quantities and grade estimated in the Resource Statement;
- **Ore Reserves** as used in this Statement are the same as “Ore Reserves” in the JORC Code and “Mining Reserves”, a common term used in the industry;
- Ore Reserves in the JORC Code are subdivided into **Proved and Probable** to reflect the confidence in the underlying resource data and modifying factors applied during mine planning;
- Mineral Resources are reported **inclusive** of Ore Reserves, (that is, Ore Reserves are not additional to Resources).

Additional terminology applied within this Statement includes the following:

- **Geological Model** (or “In Situ” Model) is the computerised three dimensional estimate of the deposit based on topographic survey data, samples derived from outcrop, drill hole or other methods. No loss of dilution parameters have been applied to this model;
- **Mineable In Situ Ore** (non-JORC terminology) is used in this Statement to refer to in situ ore within the mine designs which has not had loss and dilution applied; and
- **Run of Mine (ROM) Ore** (non-JORC terminology) is used in this Statement to refer to the mineable in situ ore after application of ore loss and waste rock dilution.
- **Plutus**: Plutus means Plutus north, central and south, and includes parts of the deposit previously called Petra.

### 1.2 Capability and Independence

This Statement was prepared on behalf of RPM by the signatory to this Statement. RPM operates as an independent technical consultant providing resource evaluation, mining engineering and mine technical valuation services to the resources and financial services industry. RPM believes its independence has in no way been compromised.

RPM has been paid, and has agreed to be paid, professional fees, by Discovery Metals Limited for preparation of this Statement.

### 1.3 Information Sources

The contents of this Statement have been created using data and information provided by or on behalf of DML. In RPM's opinion, the information provided was reasonable and nothing discovered during the preparation of this Statement suggested that there was any material error or misrepresentation in respect of that information. Information generated by third parties, consultants or contractors to DML has not been independently validated by RPM through the generation of new work or new data.

The Statement has been produced by RPM using information that is available to RPM as at the date stated on the cover page.

Key sources of data included:

- The Boseto Copper Operation – Zeta, Plutus and Zeta North East Resource Estimates (QG);
- Snowden - Boseto Feasibility Study Mining Geotechnical Section (1/10/2010);
- Turner Mining and Geotechnical Pty Ltd (TMG) - Plutus Petra Slope Design (25/02/2013);
- Site based mine designs and calculation of tonnages based on those designs;
- Mining and processing related costs based on operating experience at the mine and mill;
- 2013 Ore Reserves Statement; and
- DML Mining Website (<http://www.discoverymetals.com>).

### 1.4 Inherent Mining Risks

Mining is carried out in an environment where not all events are predictable.

Whilst an effective management team can identify the known risks and take measures to manage and mitigate those risks, there is still the possibility for unexpected and unpredictable events to occur. It is not possible therefore to totally remove all risks or state with certainty that an event that may have a material impact on the operation of a mine, will not occur.

It is therefore not possible to state with certainty, forward-looking production and economic targets, as they are dependent on numerous factors that are beyond the control of RPM and cannot be fully anticipated by RPM. These factors include but are not limited to, site-specific mining and geological conditions, the capabilities of management and employees, availability of funding to properly operate and capitalize the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner. Unforeseen changes in legislation and new industry developments could also substantially alter the performance of any mining operation.

## 2. Competent Persons Statement

The information in the report to which this Competent Persons Statement is attached, relates to the Ore Reserves of the Plutus and Zeta Open Pit Mines, and is based on information compiled and reviewed by **Mr Joe McDiarmid**, who is a Chartered Professional Member of the Australasian Institute of Mining and Metallurgy, and is an employee of RPM. Mr Joe McDiarmid has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person, as defined in the 2012 Edition of the Australasian Code for the Reporting of Mineral Resources and Ore Reserves.

Mr Joe McDiarmid is not aware of any potential for a conflict of interest in relation to this work for the Client.



.....  
**Joe McDiarmid** (B.Eng.(Mining), MAusIMM(CP))

The estimates of Ore Reserves presented in this Statement have been carried out in accordance with the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (December, 2012).

### 3. Operation Description

#### 3.1 Operation Location and Access

The Boseto Operation is located approximately 80 km southwest from the town of Maun in northwest Botswana (Africa) and is owned by DML. The general location plan is shown in **Figure 3.1**.

The Operation is accessible by a (predominantly) sealed road from Maun.

#### 3.2 Operation Description

DML commenced mining operations in 2012. Mining to date has focused on two parallel dipping orebodies containing copper and silver. The northern orebody is called Plutus, and the southern orebody is called Zeta. Currently there is a single open pit associated with the Zeta orebody and two associated with the Plutus orebody.

Mining is by conventional open pit mining methods with the ore transported to the run-of-mine (ROM) stockpile area adjacent to the processing plant, and waste rock directed to storage emplacements adjacent to the open pits. The ROM ore may be direct fed into the process plant primary crusher or placed into stockpiles and rehandled to the crusher by front-end loader.

The mining rate is adjusted as required to feed the processing plant, which has a nameplate capacity of 3.2 Mtpa. Processing capability is in excess of the mining capability to date.

The processing of copper ore involves crushing, grinding then floatation to form a concentrate of approximately 40% Cu. The process plant comminution circuit comprises three stage crushing and ball milling. Flotation includes a number of stages to maximise recovery including separate sulphide and oxide flotation circuits, copper sulphide rougher flotation, followed by multiple stages of cleaning to deliver the final concentrates.

Tailings from the process plant are directed to a Tailings Storage Facility (TSF) located on site.

Other major infrastructure located on site includes equipment workshops, a mining camp for workers, mine offices, diesel power generation facilities and access roads. Water supply is from adjacent borefields.

Ore is processed on site to produce a copper concentrate containing silver by-products. DML has a contract to sell this concentrate to Transaminvest SA. The Boseto Operation has produced 33,800 tonnes of copper, 1.3 Moz of silver and 86,000 tonnes of concentrate to date (at 30 June 2014).

#### 3.3 Climate

Botswana rainfall tends to be erratic, unpredictable and regional. The summer season commences in November and ends in March. Winter commences in May and ends in August and is referred to as the “dry season” with minimal rainfall.

Average maximum summer temperatures reach 39°C during October with maximum peak temperatures reaching 46°C. The relatively dry winter periods reach average winter maximums of 26°C with overnight lows of 0°C.

#### 3.4 Current Mining Operations

The Zeta open pit is nearing the end of its life, and is expected to be mined-out in 2015. Mining has commenced in the Plutus pits, and this is expected to continue for a number of years in parallel with the development of the Zeta Underground Project. Other deposits, such as Zeta NE and NE Mango 2 have potential for exploitation, and further drilling is expected to be completed in order to increase the confidence in the estimated Mineral Resource.

The pits are long and narrow, following the strike of the Zeta and Plutus orebodies. The Zeta ore body contains the best grades and mineralisation widths, hence the target as a future underground mine. The Zeta pit is nearly 2.5 km in length and a maximum of 250 m in width, and current pit depth is 100m (as of 30<sup>th</sup> June 2014). The final pit depth on completion is planned to be nearly 150 m.

Mining of the Plutus ore body is currently occurring in two pits, with approximately three smaller pits still to be mined. The Plutus stage 1 pit (located to the south-west of the concentrator) is nearing completion. This pit is 2.5 km in length, up to 220 m in width and currently 80 m in depth (as of 30<sup>th</sup> June 2014). The pit is planned to be 120 m in depth once complete. The Plutus stage 2 pit has recently commenced production, and is located to the north of the concentrator facilities. This pit is planned to be up to 1.5 km in length, 250 m in width and 140 m in depth.

The mining method employed utilises hydraulic excavators loading rear-dump trucks of 90 tonne class, and uses both owner-operated and contract mining equipment.

RPM understands that the mining operation has not yet achieved its target production capacity of 3.2 Mtpa ROM ore. The limitation in ore mining rate appears to be due to the limited working room within the narrow pits and single access points to the length of the pits.

### 3.4.1 Equipment

Table 3.1 shows the equipment fleet onsite. In total there are 8 excavators and 30 trucks in use currently.

**Table 3.1: Equipment Fleet Onsite**

<b>DML EQUIPMENT</b>		<b>CONTRACT EQUIPMENT</b>		<b>TOTAL FLEET</b>
Excavators (3*9350, 1*984 & 1*PC1250)	5	Excavators (2*984 & 1*PC1250)	3	8
Cubex Rigs	3	Rigs (4*DM30 & DM660)	6	8
777D Trucks	24*(22)	9*785Komatsu & 2*777D Trucks	11*(8)	30**
990 FEL	2	FEL	0	2
Track Dozers	5	Track Dozers	1	6
Wheel Dozers	2	Wheel Dozers	0	2
Graders	3	Graders	0	3
Water Trucks	3	Water Trucks	0	3
Service Trucks	2	Diesel Truck	1	3

\*including equipment currently on standby \*\*Excluding standby equipment

## 3.5 Mining Titles

DML has received the relevant Mining License from the government of the Republic of Botswana (Mining License No. 2010/99L), which is valid until 19 December 2025. This license covers the area incorporating Zeta open pit and underground Mines, and associated waste dumps and haul roads, the plant and tailings facility, and offices.

The tenement location is shown in **Figure 3.2**.



Figure 3.1: Operation Location

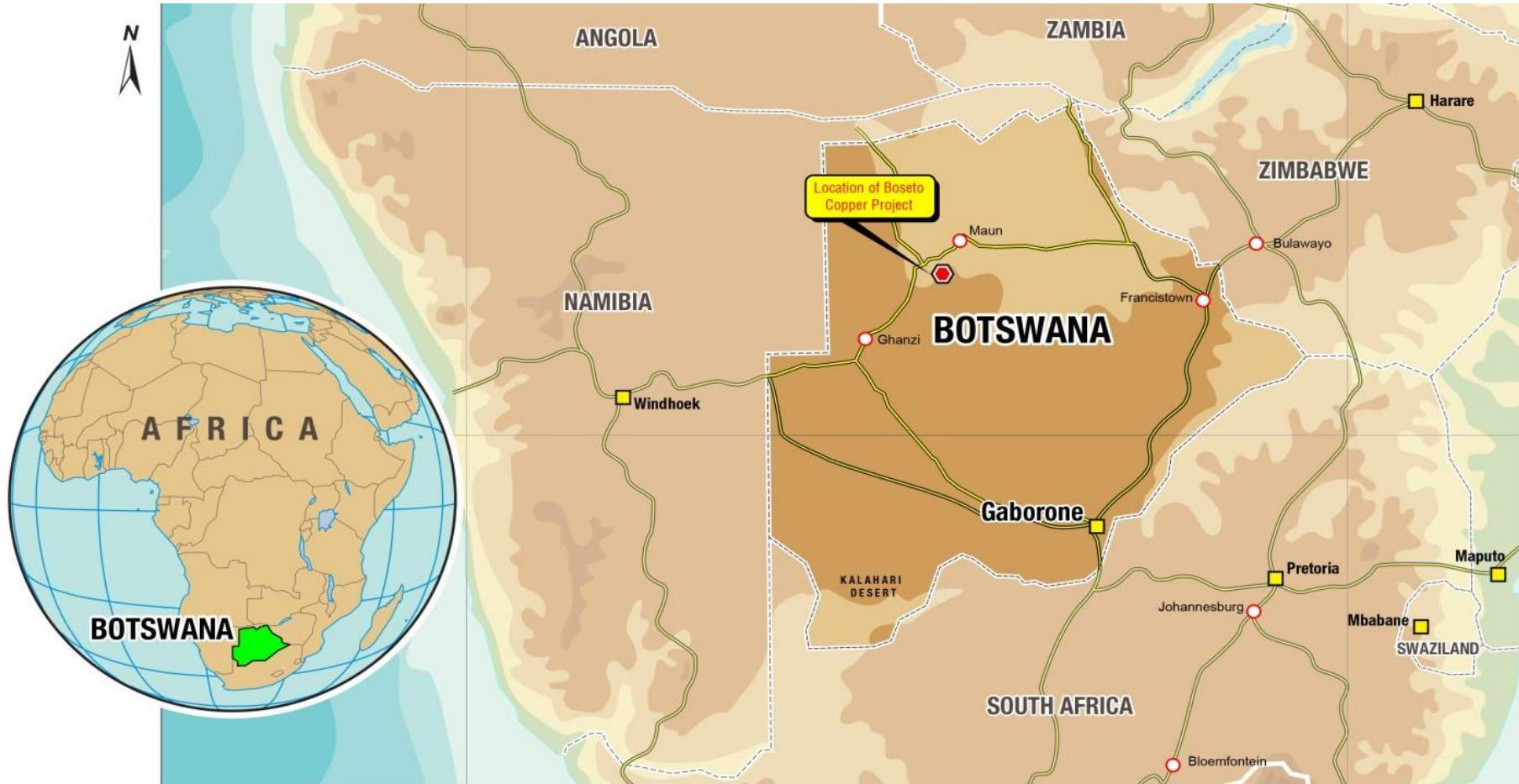
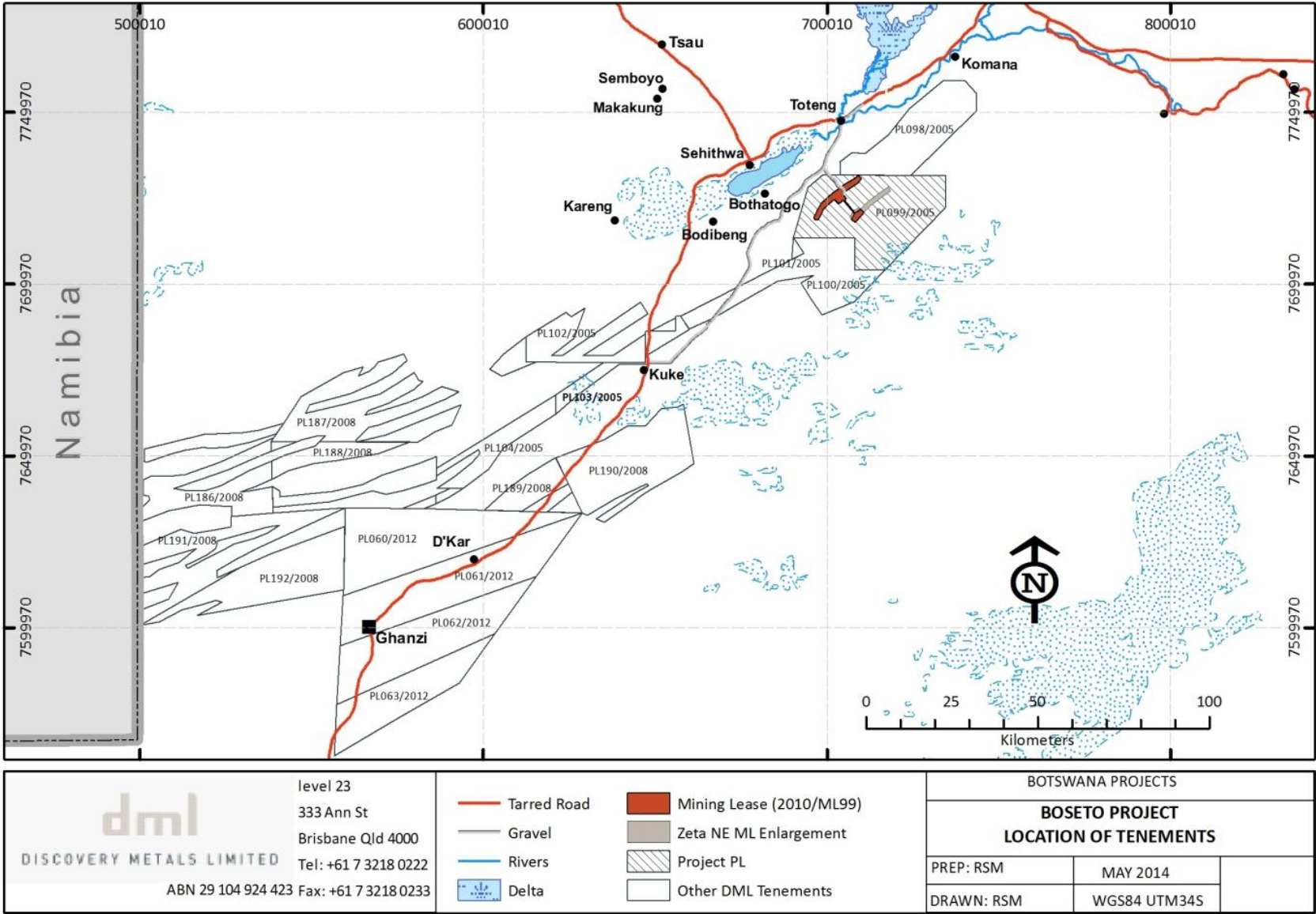


Figure 3.2: Tenement Location





## 4. Geology, Ore Quality and Mineral Resources

### 4.1 Geology and Mineralisation

#### 4.1.1 Regional Geology

The area DML is exploring and mining in the Kalahari Copper belt contains four units:

- the basement comprising the Kgwebe Volcanics.
- overlain by the Ngwako Pan Sandstone;
- the D'Kar Formation; and the Mamuno Formation.
- These are unconformably overlain by Karoo-age sedimentary rocks and basalts, and cut by Karoo-age dolerite dykes.

The whole area is overlain by varying thickness of Kalahari Sands.

Structurally the area is a fold and thrust belt with extensive NE – SW trending thrusts controlling folding. It can be divided into three structural zones, which more or less correspond with the three DML exploration zones. In the north-east (the Boseto Zone), thrusting dominates with a number of broad anticlines and narrow synclines. Mineralisation tends to occur on the north-west limb of the anticlines. In the south-west (SW Kalahari Zone), the structure is dominated by broad anticlines separated by open synclines.

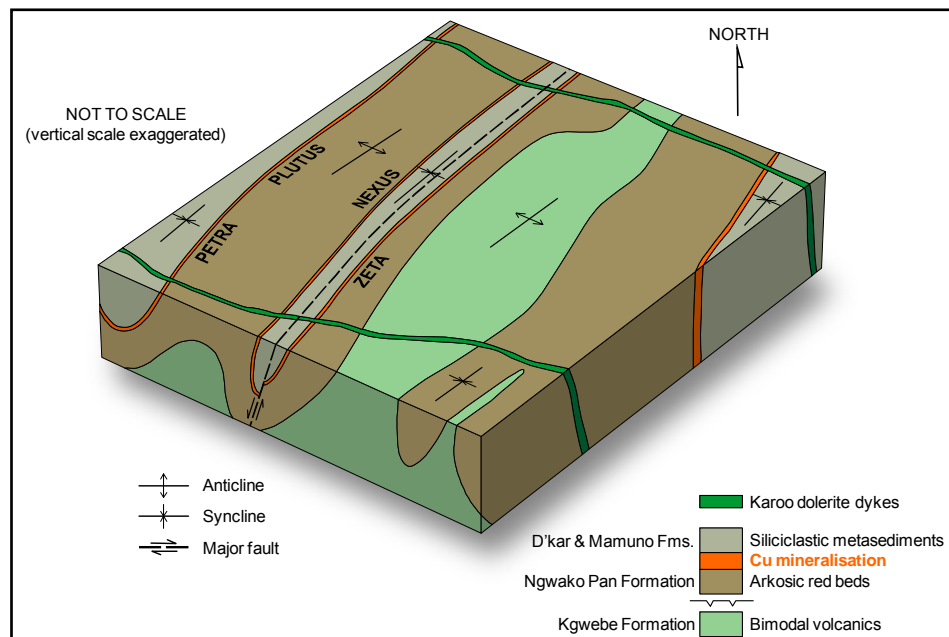
The majority of known mineralisation in the Kalahari Copper Belt is hosted by siltstone in the basal D'Kar Formation. The main examples of this are Zeta, Zeta NE and Plutus deposits. However several deposits (NE Mango 1 and NE Mango 2) have the mineralisation hosted in limestone several tens of metres above the base of the D'Kar Formation. The unit below the D'Kar Formation, the Ngwako Pan Formation, consisting of sandstone, hosts minor mineralisation such as the NE Hinge deposit on one of Cupric's leases. A mineral occurrence, Aphrodite, is located in a shear zone within the D'Kar Formation.

The mineralisation is marked by a mineralogical and geochemical zoning. From oxidised to reduced it is: hematite; chalcocite; bornite; chalcopyrite; pyrite; galena (Pb); sphalerite (Zn); and barite. This zoning is important in exploration as Cu-Zn in soil anomalies are typically associated with mineralisation.

#### 4.1.2 Local Geology

The local interpretation of geology at Boseto is that the mineralised D'Kar contact is folded in a series of upright tight folds. Zeta, Zeta NE and Plutus lie on west-dipping limbs while Nexus lies on the east-dipping limb between (see Figure 4.1). More recent drilling has traced the D'Kar contact south from Plutus around an anticlinal fold closure and northwards to Nexus.

**Figure 4.1: Previous schematic interpretation of Boseto geology (from Snowden 2011)**



## 4.2 Mineral Resource Estimate

A separate Mineral Resource has been completed for the Zeta and Plutus deposits at the Boseto Operation.

### 4.2.1 Zeta

QG has provided DML with an updated resource model for the Zeta Deposit. The estimate is based on new geological interpretations that incorporate Reverse Circulation (RC) grade control drill holes and knowledge gained during the mining of the deposit to date.

A total of 865 drill holes (413 diamond core, 93 RC resource drill holes and 359 RC grade control drill holes) have been used to define the mineral resource. QG reviewed the quality of drill data (location, sampling and assay quality) and conclude that the data is of acceptable quality for use in resource estimation. Wireframe solid model interpretations of mineralisation using thresholds of ~0.3% and 1.5% copper were updated. Surfaces defining the base of complete oxidation and the top of fresh rock were also defined. Ordinary kriging was used to estimate copper, silver, sulphur, acid soluble copper, acetic acid soluble Cu and density into blocks constrained within the wireframe models. Hard boundaries were applied to estimation within mineralisation domains, and the oxide/transition boundary was also treated as hard for all variables except copper. Top-cuts were applied to grades of silver and acid soluble copper.

The model has been classified according to the JORC Code (2012).

QG's estimate of Mineral Resources for the Zeta deposit as at 30th June 2014 is summarised in Table 4.1. Sections 1 to 3 of Table 1 can be referenced in the relevant 2014 JORC Mineral Resource Statement.

**Table 4.1: Zeta Mineral Resource Estimate as at 30th June 2014**

Category	Mt	Cu (%)	Ag(ppm)
Measured	2.3	1.3	22
Indicated	7.7	1.3	25
<b>Subtotal Measured &amp; Indicated</b>	<b>10.0</b>	<b>1.3</b>	<b>24</b>
Inferred	8.9	1.8	26
<b>Total Mineral Resource</b>	<b>18.9</b>	<b>1.5</b>	<b>25</b>

Notes: Mineral resource estimates include: Open Pit resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground resources reported above a cut-off grade of 1.08% Cu equivalent ( $CuEq = Cu + Ag \times 0.008546$ ) and a 4m minimum mining width. Open pit resources are constrained within the current pit design. Underground resources are constrained within the limits of geological interpretation and extend to 800m below surface. Underground resources are exclusive of open pit resources. **This estimate is inclusive of such open pit and underground reserves as may be declared.**

#### 4.2.2 Plutus

QG have provided DML with an updated resource model for the Plutus Deposit. The estimate is based on updated geological interpretations that incorporate Reverse Circulation (RC) grade control drill holes drilled since July 2013 and knowledge gained during the mining of the deposit to date.

A total of 1658 drill holes (609 diamond core, 5 resource RC, 15 short air core holes and 1034 RC grade control drill holes) have been used to define the Mineral Resource. QG reviewed the quality of drill data (location, sampling and assay quality) and conclude that the data is of acceptable quality for use in Mineral Resource estimation. Wireframe solid model interpretations of mineralisation using thresholds of ~0.3% and 1.5% copper were updated. Surfaces defining the base of complete oxidation and the top of fresh rock were also defined. Ordinary kriging was used to estimate copper, silver, sulphur, acid soluble copper, acetic acid soluble copper and density into blocks constrained within the wireframe models. Hard boundaries were applied to estimation within mineralisation domains, and the oxide/transition boundary was also treated as hard for all variables except copper. Top cuts were applied to some variables as required.

The model has been classified according to the JORC Code (2012).

QG's estimate of Mineral Resources for the Zeta deposit as at 30th June 2014 is summarised in Table 4.2. Sections 1 to 3 of Table 1 can be referenced in the relevant 2014 JORC Resource Statement.

**Table 4.2: Plutus Mineral Resource Estimate as at 30th June 2014**

Category	Mt	Cu (%)	Ag(ppm)
Measured	5.0	1.25	11
Indicated	12.9	1.30	13
<b>Subtotal Measured &amp; Indicated</b>	<b>17.9</b>	<b>1.29</b>	<b>14</b>
Inferred	63.8	1.31	14
<b>Total Mineral Resource</b>	<b>81.7</b>	<b>1.31</b>	<b>13</b>

Notes: Mineral Resource estimates include: Open Pit Mineral Resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide. Open pit Mineral Resources are constrained within a pit optimisation shell run at 1.5 times the Ore Reserve commodity price. Mineral Resource estimates are inclusive of such open pit and underground Ore Reserves as may be declared.

## 5. Ore Reserve Estimate

### 5.1 Approach

The following sections describe the modifying factors used to modify the Mineral Resources in order to report Ore Reserves. The order generally follows “**Table 1 - Check List of Assessment and Reporting Criteria**” in the JORC Code, which is included as an Appendix to this Statement.

The approach adopted for completing the Statement is described below.

- Modifying factors were provided by the Client based on its mining experience gained from the Operation since commencement in 2012.
- Pit design parameters and overall pit slope angles were defined based on geotechnical assessment and site experience.
- Costing for mining, processing, transport and selling were provided by DML and cross-checked against current site cost reports.
- Expected recoveries and payable contents for copper and silver were provided by DML.
- Gemcom’s “Whittle 4X” software was used to identify the economic pit limits. The Whittle 4X software uses the Lerchs-Grossman technique to define a three dimensional pit shell that allows for variations in ore grade, costs and also geotechnical slope angles. Only Measured and Indicated Resources were considered when defining the economic pit shell.
- The Whittle 4X software was used to create a series of nested pit shells based on a range of metal selling prices.
- The Whittle shell that delivered approximately the highest cashflow, for the base case metal price, while still delivering a practical mining shape was selected to establish the economic pit limits. This, combined with other criteria such as lease boundaries and other physical constraints was used to design practical pit shells.
- An ultimate pit design was completed, using the selected Whittle pit shell as a guide. The design considered practicality constraints such as minimum mining width and pit access.
- The ore cut-off grade for the deposit was estimated based on the mine operating parameters, such as mining costs, metallurgical recovery and metal selling price.
- The mineable in situ ore within the designed pit shell was then estimated for the given ore cut-off grade using the Mineral Resource geological model. The quantities were reported separately for each Resource classification.
- Mining modifying factors, such as ore loss and waste rock dilution, were applied to the mineable in situ ore quantities to convert them to ROM ore quantities.
- A Life-of-mine (LOM) schedule was completed to confirm the quantities of ROM ore to be directed to the process plant and the quantities of product made. Only the ROM ore directed to the process plant can be converted to Ore Reserves. The LOM schedule also confirmed the practicality of the proposed mining development.
- The economic viability of the Operation was examined by a total project economic model.
- On confirming that the scheduled ROM ore was both practical and economic to mine, they were designated as Ore Reserves.

- The Ore Reserves were categorised as either Proved or Probable based on the underlying Mineral Resource categories and the level of confidence in the modifying factors applied to the Mineral Resource.
- Spot checks were completed and the results and supporting data are documented in this Statement.

## 5.2 Study Status

A mine plan (the “Study”) has been developed in order to support the declaration of an Ore Reserves estimate. The mine plan demonstrates that the Ore Reserves are technically achievable and economically viable. As mining from Plutus and Zeta open pits is currently in progress, the development of the Study has been supported and validated by recent operational data supplied by DML. Based on this Study, modifying factors as stated below have been used to convert a subset of the reported Measured and Indicated Mineral Resources into Ore Reserves.

A previous Ore Reserves Statement was prepared in accordance with the JORC Code (2012) for the Zeta and Plutus pits. The Open Cut Ore Reserves as at 31 May 2013 were estimated at 7.8 Mt, comprising 1.8 Mt from Zeta and 6.0 Mt from Plutus.

In addition, a total of 7.3 Mt underground Ore Reserves have been estimated as at 30 June 2014 by RPM.

## 5.3 Mineral Resource Estimate

The Mineral Resource estimate that underlies the Ore Reserves estimate is summarised in **Section 4** of this Statement. The Competent Person who supervised the Mineral Resource estimate is Mr Mike Stewart who is a full time employee of QG and is a member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists.

Mineral Resources quoted in this report are inclusive of Ore Reserves.

The filenames of the Resource Geological Models used as a basis for Ore Reserves are:

- Plutus Central : “plutus\_c\_140826”
- Plutus South: “plutus\_s\_140826”
- Zeta: “zeta1406\_20140826”

## 5.4 Site Visit

A site visit was undertaken by Mr Joe McDiarmid of RungePincockMinarco Limited on the 8th of May 2014.

## 5.5 Cut-off Grade Parameters

The ore cut-off grade is based on the price, mining factors and costs described in the following sections.

The metallurgical recovery varies depending on the ratio of acid soluble copper (AsCu%) to total copper (TCu%)<sup>2</sup>. The higher the ratio of acid soluble copper to total copper grade, the lower the metallurgical

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<sup>2</sup> See processing section of this chapter for actual relationship.

recovery. As recovery increases, the cut-off grade decreases. Additionally the assumed loss and dilution affects recovery. Different loss and dilution assumptions have been made for Zeta and Plutus<sup>3</sup>, and hence the cut-off grade for each deposit varies. The cut-off grade is reported on both an in situ basis, that is, before loss and dilution is applied to the Resource Geological Model, and in a ROM basis, after application of the relevant loss and dilution parameters.

The cut-off grade and Cu equivalent for Ag is shown below in Table 5.1 for Zeta. The average ratio for AsCu to TCu for Zeta is between 0.1 and 0.2, as mining is occurring near the base of the final pit, and there is minimal oxidised AsCu at this depth. Therefore on average the cut-off grade is between 0.52 and 0.59 TCu% for the in situ Resource model for Zeta.

**Table 5.1: Cut-off Grade in term of Cu (%) for Zeta**

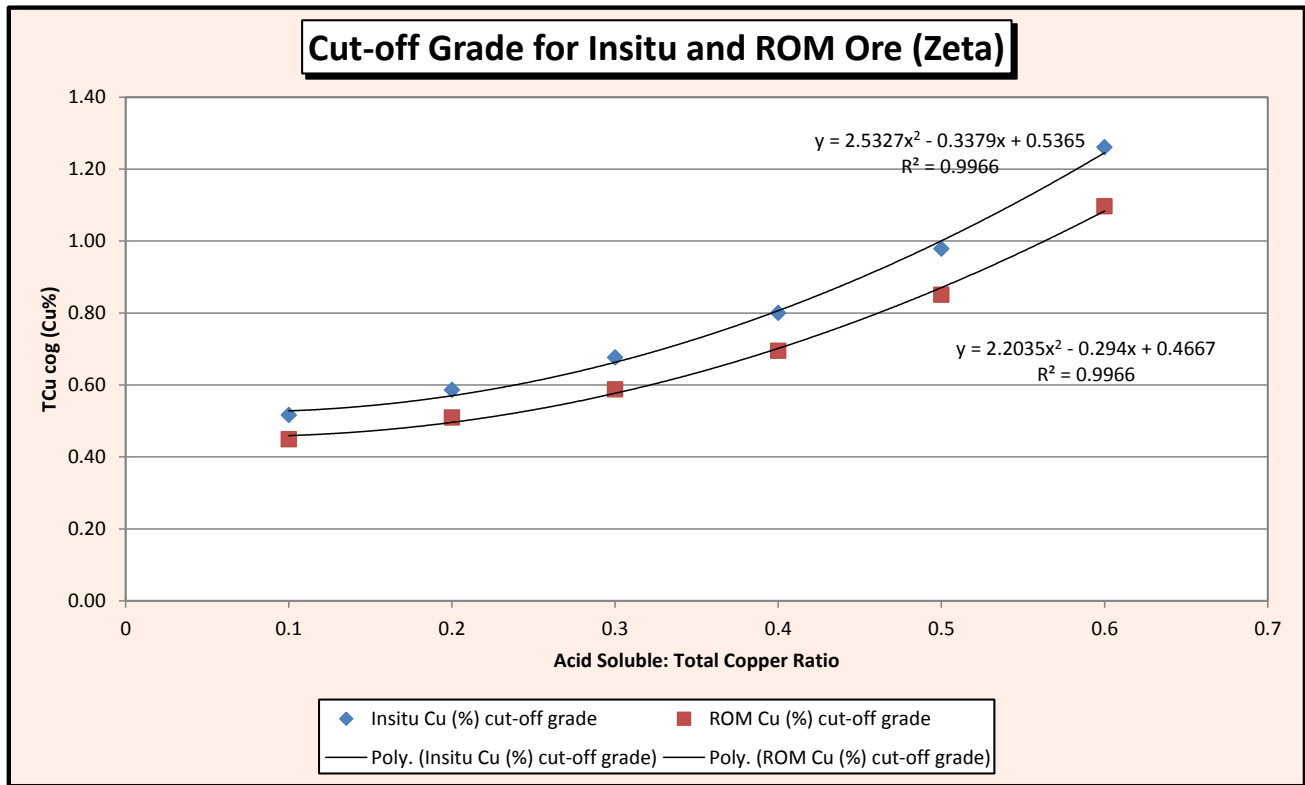
<b>AsCu:TCu Ratio</b>	<b>In situ Open pit Cu (%) cut-off grade</b>	<b>ROM Cu (%) cut-off grade</b>	<b>Cu (%) equiv Ag (g/t)</b>
0.1	0.52	0.45	0.0085
<b>0.2*</b>	<b>0.59</b>	<b>0.51</b>	<b>0.0090</b>
0.3	0.68	0.59	0.0074
0.4	0.50	0.45	0.009
0.5	0.57	0.51	0.009
0.6	0.65	0.59	0.007

\*Ore Reserve average for Zeta

The table above was used to generate a regression curve for cut-off grade. The formula used for in situ cut-off grade is  $\text{cog} = 2.5327x^2 - 0.3379x + 0.5365$ , where x is the acid soluble to total copper ratio.

<sup>3</sup> See later section on loss and dilution for discussion.

Figure 5.1: Cut-off Grade for Zeta per AsCu:TCu ratio



The Plutus cut-off grade and Cu equivalent for Ag is shown below in Table 5.2. The average ratio for AsCu to TCu for Plutus is between 0.3 and 0.4, as mining occurs near the surface, where most of the oxidised (and hence acid soluble) copper is located. Therefore on average the cut-off grade is between 0.65 and 0.77 TCu% for the in situ Resource model.

Table 5.2: Cut-off Grade in term of Cu (%) for Plutus

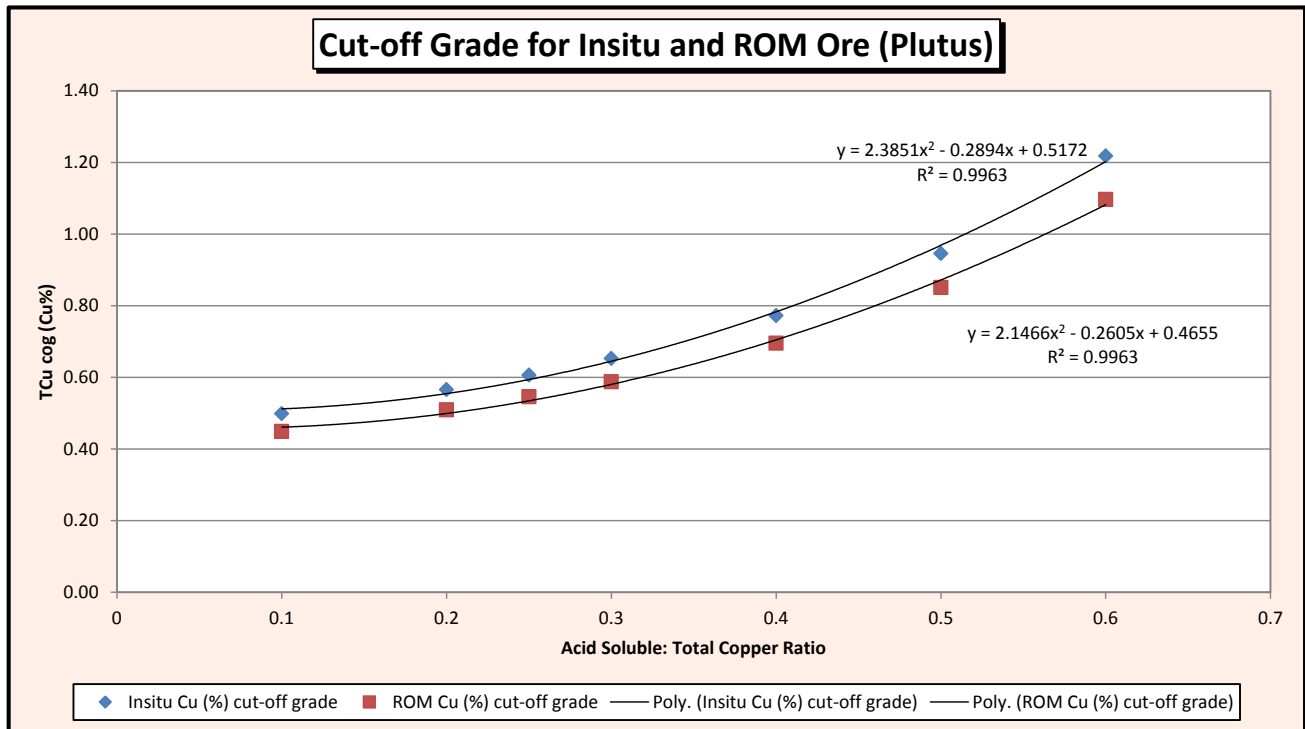
AsCu:TCu Ratio	In situ Open pit Cu (%) cut-off grade	ROM Cu (%) cut-off grade	Cu (%) equiv Ag (g/t)
0.1	0.50	0.45	0.0085
0.2	0.57	0.51	0.0090
<b>0.25*</b>	<b>0.61</b>	<b>0.55</b>	<b>0.0069</b>
0.3	0.65	0.59	0.0074
0.4	0.77	0.70	0.012
0.5	0.95	0.85	0.011
0.6	1.22	1.10	0.014

\*Ore Reserves average

The table above was used to generate a regression curve for cut-off grade. The formula used for in situ cut-off grade is  $\text{cog} = 2.3851x^2 - 0.2894x + 0.5172$  where x is the acid soluble to total copper ratio.



Figure 5.2: Cut-off Grade for Plutus per AsCu:TCu ratio



## 5.6 Mining Factors

The mining factors are those parameters applied to the mineable in situ ore to enable conversion to ROM ore. The key mining modifying factors are the ore loss and waste rock dilution. The ore loss and waste rock dilution is largely a function of the characteristics of the ore body and the mining method.

### 5.6.1 Mining Method

A conventional open pit mining method is used, employing a combination of 100t and 300t class excavators loading 90 tonne rear dump trucks. This mining method is generally suited to the characteristics of the deposit, given the high strip ratio and narrow ore zone.

The resultant mining ore loss and waste rock dilution based on the mining method is described below.

### 5.6.2 Mining Ore Loss and Waste Rock Dilution

The mining ore loss and waste rock dilution is determined by site based on grade control drilling and reconciliations conducted on a monthly basis.

The ore loss and dilution factors used for Zeta and Plutus are shown in Table 5.3 below. The ore loss and dilution for Plutus has been reduced by site given expected improvements in mining selectivity based on reducing the bench height to 2m in high grade ore zones and using blast markers to track ore movement during blasting. Monitoring of actual loss and dilution with these improvements is recommended to ensure the improvement in loss and dilution is realised. The Zeta pit is expected to shortly be exhausted, and hence negligible changes in loss and dilution are expected for Zeta.

Table 5.3: Mining Ore Loss and Dilution

	Loss	Dilution
<b>Zeta</b>	3%	13%
<b>Plutus</b>	2%	10%

## 5.7 Geotechnical Parameters and Other Pit Design Criteria

### 5.7.1 Zeta

The geotechnical assumptions for Zeta are based on the Mining Feasibility Study Report prepared by Snowden<sup>4</sup> together with site experience gathered since operations commenced. The pit design parameters are shown below in Table 5.4.

**Table 5.4: Zeta Pit Design Parameters**

	<b>Berm Width</b> m	<b>Bench Height</b> m	<b>Batter Angle</b> degree	<b>Inter-ramp slope</b> degree
<b>Footwall Weathered*</b>	5	12	70	52
<b>Footwall</b>	5	12	80	59
<b>Hanging Wall Weathered*</b>	5	12	50	39
<b>Hanging Wall</b>	5	12	60	45

Within the current pit, a wider berm is also located at the 902 mRL (approximately 80 m in depth) of approximately 11 m in width, which reduces the overall slope angle. The footwall batter angle in fresh rock was increased from Snowden's recommended 75 degrees to 80 degrees, based on site experience. The actual slope angles of the majority completed Zeta pit as at 30 June 2014 as measured from the EOM survey are approximately 57 degrees for the hanging wall and 44 degrees for the footwall.

No major wall failures were noted during the site visit. There was no evidence of perimeter blasting or additional ground support. The pits were very dry.

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<sup>4</sup> Boseto Feasibility Study Mining Geotechnical Section (1/10/2010) (Snowden)

Figure 5.3: View of Zeta Pit, looking to the north



### 5.7.2 Plutus

The geotechnical parameters for Plutus are based on a geotechnical study completed by TMG in February 2013<sup>5</sup> and site experience at Plutus since operations commenced. The pit design parameters are shown below in Table 5.5.

Table 5.5: Plutus Pit Design Parameters

	Berm Width	Bench Height	Batter Angle	Overall
	m	m	degree	degree
<b>Footwall Weathered*</b>	6	12	40	31
<b>Footwall</b>	5	12	60	42
<b>Hanging Wall Weathered*</b>	6	12	40	31
<b>Hanging Wall</b>	5	12	70	52

\*This applies to upper 12 m according to TMG geotechnical study

The weathered material according to the geotechnical study ranges to a depth of 12 metres from the surface.

No major failures were noted during the site visit, but some of the benches are covered by loose material, limiting the ability of the berms to stop rock falls reaching the lower benches. There was no evidence of perimeter blasting or additional ground support. The pits were very dry.

<sup>5</sup> Turner Mining and Geotechnical Pty Ltd (TMG) - Plutus Petra Slope Design (25/02/2013)



Figure 5.4: Plutus Pit from lookout, looking to the south



### 5.7.3 Other Pit Design Criteria

Generally a minimum mining width of 30 m was applied when pit designs were completed to account for practicalities of mining at the base of an open pit. Where high value ore was located, it was deemed reasonable to reduce the minimum mining width for selected areas of the pit, as the value of the ore made increased selectivity worthwhile.

The ramp width is 24 m for dual access at a grade of 10%. At the base of some pits narrower ramps have been used to access the bottom benches.

## 5.8 Pit Limits

The pit limits were defined by considering both physical and economic constraints to mining. RPM has not identified or been informed of any physical constraints to mining within the lease area. No property, infrastructure or environmental issues are known to exist which may limit the extent of mining within the mining lease. The economic mining limits were determined using the Whittle 4X pit limit optimisation software ("Whittle 4X").

To define the economic pit limit the geological model was imported into the Whittle 4X software. Key inputs to Whittle 4X were estimates of geotechnical design criteria, metallurgical recovery, mining and processing costs, and selling price. The geotechnical parameters are listed in **Section 5.7**. The metallurgical assumptions are outlined in **Section 5.9**. The cost assumptions are provided in **Section 5.12**. The metal sales price assumptions are provided in **Section 5.13**.

The estimated cashflow for each pit shell was calculated to assist in selecting a preferred pit shell for mine design. The preferred pit shell was selected by choosing the highest cashflow shell, which also happened to be the 100% revenue factor pit shell in each case.

The output of Pit Limit Optimisation is a three-dimensional pit shell. The Whittle pit shell is then used as a basis for detailed pit design.

The detailed pit designs for the Zeta and Plutus Pits are illustrated in Figure 5.5. In total there are seven pits: six are located along strike at Plutus, and one at Zeta. Further detail is shown in the figures below.

**Figure 5.5: Site Layout Showing Plutus and Zeta Pits**

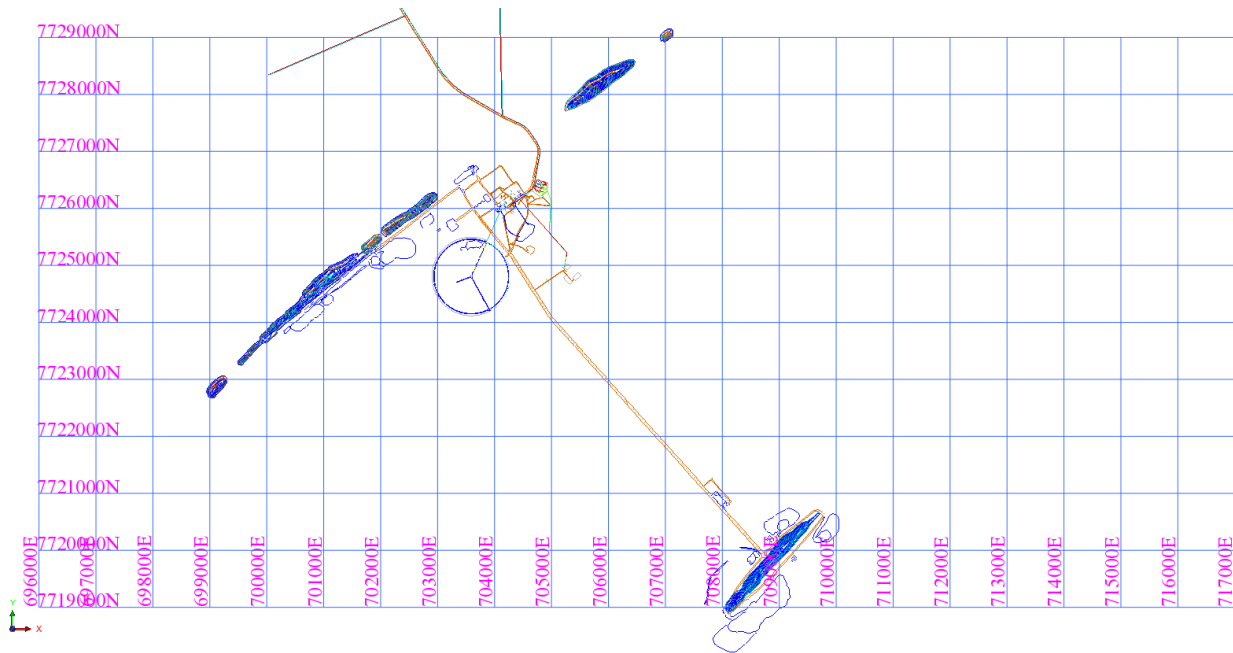


Figure 5.6 shows the Zeta Pit, which has been predominantly mined out.

**Figure 5.6: Zeta Pit**

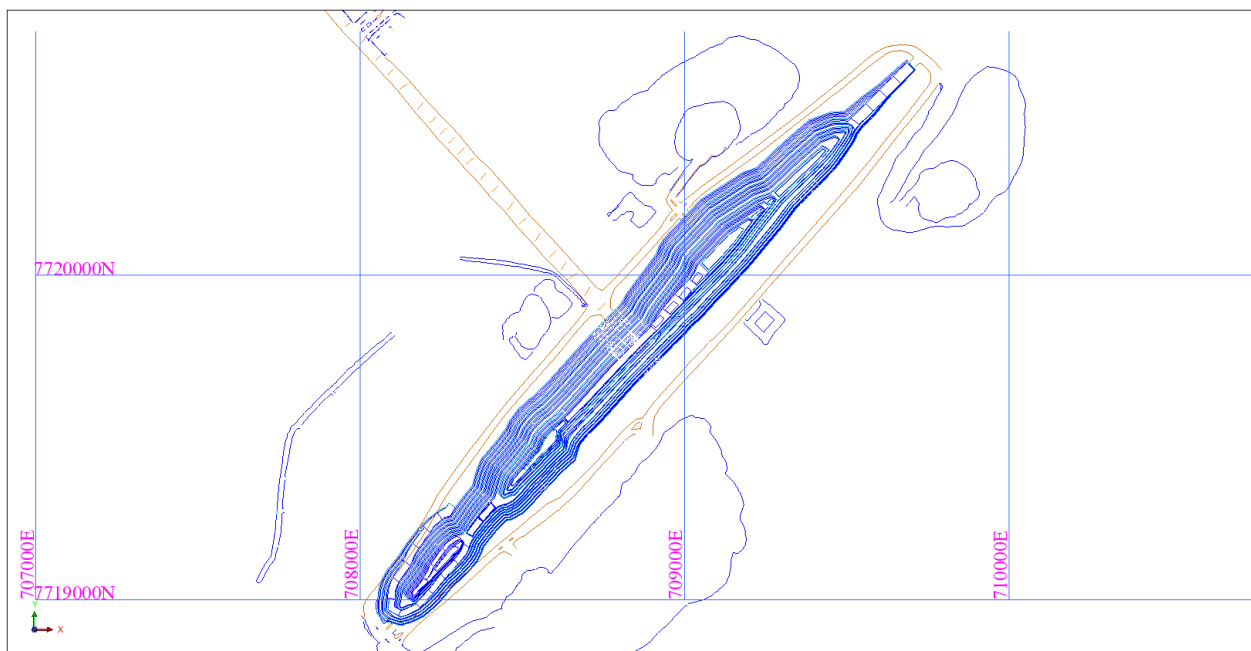


Figure 5.7 shows the Plutus southern pits, including the largest pit (stage 1) currently being mined.

**Figure 5.7: Plutus southern pits (4 pits)**

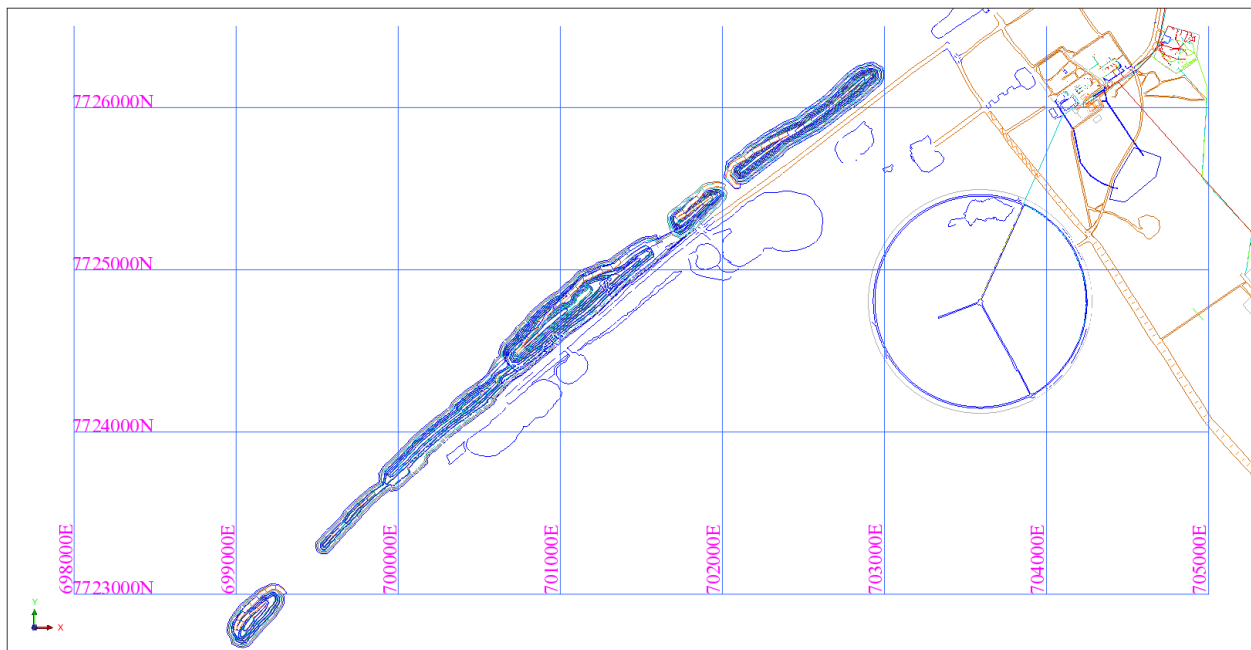
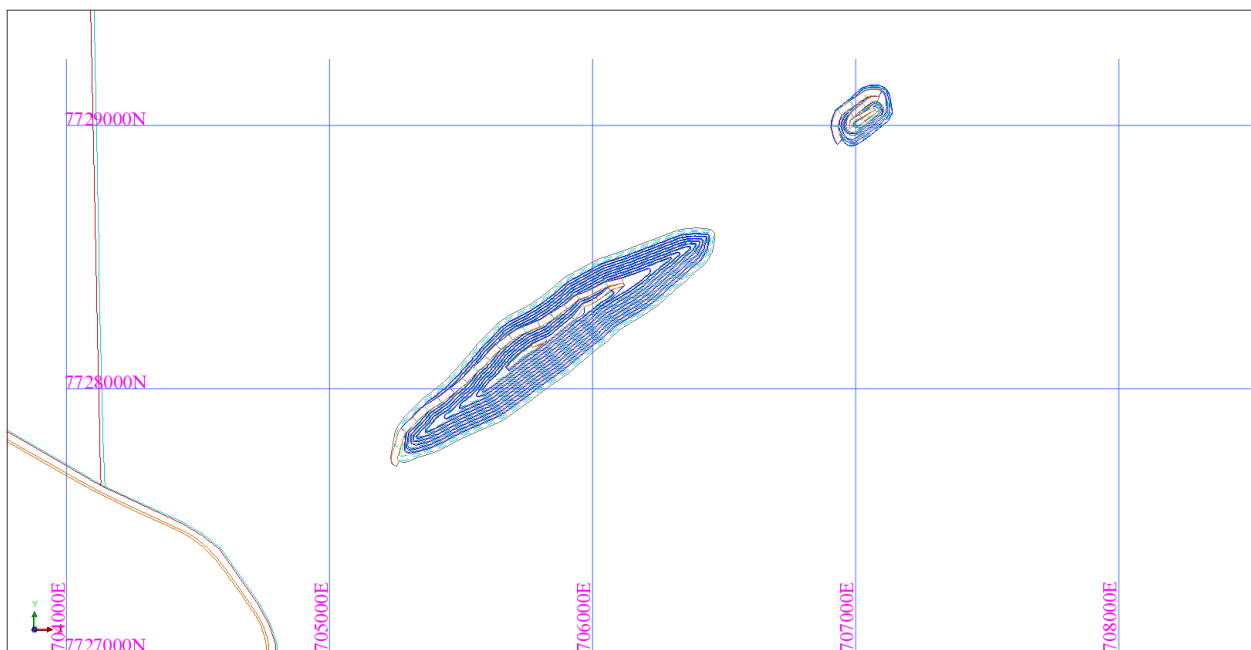


Figure 5.8 shows the Plutus northern pits. There are two pits, the largest of which (Plutus stage 2) has recently commenced mining.

**Figure 5.8: Plutus northern pits (2 pits)**



### 5.8.1 Treatment of Inferred Resources

The pit optimisation was run with revenue generated only by Measured and Indicated Resources. That is, no value was allocated to Inferred Resources.

## 5.9 Metallurgical Modifying Factors

The Boseto processing plant uses grinding and flotation to extract a copper concentrate that also includes silver. The plant has a nameplate capacity of 3.2 Mtpa throughput. The plant processed 2.1 Mt in FY13 and 2.2 Mt in FY14.

The technology used in the processing plant is well proven, and the plant has been operating successfully since 2012.

The metallurgical recovery for copper is dependent on the ratio of AsCu% to TCu% and calculated for each block. The higher the amount of AsCu% the lower the recovery. The recovery is calculated using the following formula:

$$((99.705-(105.31*(\text{AsCu\%/TCu\%}))/100$$

The FY13 copper recovery was 70%, and the FY14 copper recovery was 77%. The ratio of AsCu% to TCu% was not present in the information provided to RPM, and so RPM is unable to reconcile the above formula, however this increase in recovery matches the decreasing amount of AsCu% expected as mining progresses to deeper levels of the current pits. Back calculating the formula 70% recovery related to an acid soluble copper ratio of 0.29, and 77% relates to an acid soluble copper ratio of 0.21.

The process metallurgical recovery for silver is fixed by material type:

- oxide = 50%
- transitional = 70%
- sulphide = 75%

Typical expected average metallurgical recoveries for each pit are set out in **Table 5.5**.

**Table 5.6: Expected Average Recoveries<sup>6</sup>**

Item	Units	Zeta	Plutus Central	Plutus South
Cu recoveries (average)	%	85%	74%	77%
Ag recoveries (average)	%	75%	74%	72%
Cu recovery formula	-	Rec % = $-105.31 * (\text{AsCu:TCu Ratio \%}) + 99.705$		

## 5.10 Environmental and Social

No known environmental issues are known to exist which will prevent open pit mining from continuing. DML appears to have sufficient space available for waste dumps to store the expected quantities of mine waste rock associated with the Zeta and Plutus open pit Ore Reserve. Based on testing to date no potentially acid forming material has been identified.

Likewise, Boseto has sufficient capacity in its purpose designed and approved tailings storage facility to meet the requirements generated from mining and processing quantities listed in for the Plutus and Zeta Ore Reserve. The TSF has been designed to treat up to 3 million tonnes of copper ore per year for a period of at least 10 years, with wall raises scheduled at 15 month increments. It is assumed that the total tonnage of tailings produced over that time will be in the order of 30 Mt. The final height of the embankment will be around 15 - 20m depending on the in situ density achieved in the deposited tailings. The TSF is of upstream construction, using selected mine waste rock, excavated tailings, or a combination of tailings and waste rock.

### 5.10.1 Social

<sup>6</sup> Based on Whittle Pit Optimisation Results



DML have established relevant agreements with local stakeholders. The mine plan for the operation of the open pit includes a mix of skilled expatriate workers and locally sourced skilled workers.

## 5.11 Infrastructure

Boseto is currently in operation and hence has the required infrastructure in place to continue to process the Plutus and Zeta open pit Ore Reserves to form a saleable concentrate.

## 5.12 Capital and Operating Costs

### 5.12.1 Capital Costs

The mine is currently operating as an open pit mine, and hence no material additional capital requirements are expected for mining of the open cut Ore Reserves.

As the mine commenced in 2012, the DML owned equipment has likely significant operating life remaining. Therefore it is not expected that material additional capital will be required to enable mining of the Ore Reserve quantities.

### 5.12.2 Operating Costs

Mining operating costs and other economic inputs are based on current unit rates provided by DML. The following unit rate inputs were provided based on site operating costs:

- Clear and Grub
- Topsoil removal
- Waste dump management
- Drill and blast
- Load and haul cost that varies by depth and distance to dump point/ROM pad
- Processing cost
- Site overhead costs
- Offsite overhead costs
- Power costs for diesel generator

The onsite (rock and ore) costs are shown in the table below.

**Table 5.7: Summary Average Mining Cost Results**

Item	Units	Zeta	Plutus Central	Plutus South
Rock mining cost	\$/t rock	1.70	1.60	1.60
Total Ore Cost (Additional ore mining cost, Processing cost, Power, Admin)	\$/tonne ore	22	21	21

## 5.13 Revenue and Offsite Cost

A copper price of US\$7,000/t and silver price of US\$20/oz were provided by DML and validated by RPM using published metal price forecasts. The transport costs have been provided by DML. The treatment and refining

charges are based on the current sales contract. DML has a Copper Concentrate Sales Agreement with Transaminvest SA.

All the evaluation was conducted in USD, so no exchange rates are required.

There are allowances in the sales contract for penalties for Chlorine and Fluorine, however there are no issues with penalties for the concentrate. There have never been any penalties payable for fluorine, however there used to be some issues with chlorides due to chlorides introduced from bore water. These have now been resolved (cake washes in the filter press remove chlorides introduced by the bore water – therefore no issues with chlorides in the concentrate).

The economic parameters used for the Study are shown in the table below.

**Table 5.8: Economic Parameters**

Item	Units	Value
Cu price	\$/t Cu	7,000
Ag price	\$/toz	20
Payable Metal Cu	(%)	96.65%
Payable Metal Ag	(%)	93.00%
Royalties - Copper	(% Revenue)	3%
Royalties - Silver	(% Revenue)	5%
Private Royalty	(% Revenue)	0.25%
Transport	(\$/wmt conc.)	250
Smelting Treatment charge	(\$/dmt conc.)	92
Refining cost per lb Cu metal	(\$/lb Cu metal)	0.092
Refining cost per oz Ag metal	(\$/oz metal)	0.40

#### 5.14 Economic Assessment

A schedule and economic model has been completed using the Ore Reserves published in this Statement. The inputs used are as per those stated in the relevant sections of this Statement. The assessment used a discount rate of 9.5%, as supplied by DML, which is considered appropriate by RPM.

The base case economic model results in a positive economic outcome on a project basis as assessed by a NPV assessment.

#### 5.15 Other Relevant Factors

The estimate of Ore Reserves for the Plutus and Zeta Open Pits are not, to RPM's knowledge, materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that would prevent the classification of Ore Reserves.

#### 5.16 Classification

Ore Reserves have been classified based on the underlying Mineral Resources classifications and the level of detail in the mine planning. The Mineral Resources were classified as Measured, Indicated and Inferred. The Ore Reserves, based only on the Measured and Indicated Resources, have been classified as Proven and Probable Ore Reserves, respectively.

The Ore Reserve is classified as Proved and Probable in accordance with the JORC Code, corresponding to the Mineral Resource classifications of Measured and Indicated and taking into account other factors where relevant. The deposit's geological model is well constrained. The Ore Reserve classification is considered

appropriate given the nature of the deposit, the moderate grade variability, drilling density, structural complexity and mining history. Therefore it was deemed appropriate to use Measured Mineral Resources as a basis for Proven Reserves and Indicated Mineral Resources as a basis for Probable Reserves.

No Inferred Mineral Resources were included in the Ore Reserve estimate.

## 5.17 Audits and Reviews

The JORC Code provides guidelines which set out minimum standards, recommendations and guidelines for the Public Reporting of exploration results, Mineral Resources and Ore Reserves. Within the JORC Code is a "Checklist of Assessment and Reporting Criteria" (Table 1 – JORC Code). This checklist has been used as a systematic method to undertake a review of the underlying Study used to report in accordance with the JORC Code. Table 1 is presented in the Appendix.

RPM prepared a high level LOM Plan based on the ROM mineable ore contained within the pit designs. RPM reviewed the LOM Plan for reasonableness and accuracy and confirmed that it was suitable for estimation of Ore Reserves. An economic model was prepared in conjunction with DML that confirmed the Operation to be economically viable.

In addition, checks were done to validate the Mineral Resources to Ore Reserves calculations within an Excel spread sheet. The difference between the total quantity of Measured and Indicated Mineral Resources and the Ore Reserves is explained by the following:

- There are ore losses and dilution gains in the Ore Reserve estimation process;
- There are some Measured and Indicated Mineral Resources in the mine design that could not be considered Ore Reserves as it is below the economic cut-off grade and is not economically viable to mine.

The review and cross reference against the JORC Code check list showed no material omissions. RPM concludes the Ore Reserves have been reported in accordance with the JORC Code.

## 5.18 Ore Reserves

A total of 8.0 million ROM tonnes of Open Pit Ore Reserves were estimated within the Plutus and Zeta pits which are categorised as Proven and Probable Ore Reserves (see Table 5.9). The quantities are estimated as at 30<sup>th</sup> June 2014. No Probable Ore Reserves have been derived from Measured Mineral Resources; all Probable Ore Reserves have been derived from Indicated Mineral Resources.

**Table 5.9: Summary of Open Pit Ore Reserve as at 30<sup>th</sup> June 2014**

<b>Classification</b>	<b>Tonnes <sup>7</sup></b>	<b>Total Copper Grade (%)</b>	<b>Acid Soluble Cu Grade (%)</b>	<b>Ag Grade (ppm)</b>
Probable	3,100,000	1.30	0.29	14
Proven	4,900,000	1.20	0.30	13
<b>Proven + Probable</b>	<b>8,000,000</b>	<b>1.20</b>	<b>0.30</b>	<b>14</b>

*Notes: Estimates have been rounded to two significant figures to reflect accuracy.*

*All the estimates are on dry tonne basis.*

<sup>7</sup> Totals may not add due to rounding.

### 5.18.1 Plutus

The Open Pit Reserves for only Plutus are shown in the table below.

**Table 5.10: Open Pit Plutus Ore Reserve as at 30<sup>th</sup> June 2014**

Classification	Tonnes	Total Copper Grade (%)	Acid Soluble Cu Grade (%)	Ag Grade (ppm)
Probable	3,000,000	1.30	0.30	14
Proved	3,700,000	1.20	0.34	11
<b>Proved + Probable</b>	<b>6,600,000</b>	<b>1.20</b>	<b>0.32</b>	<b>12</b>

*Notes: Estimates have been rounded to two significant figures to reflect accuracy.*

*All the estimates are on dry tonne basis.*

### 5.18.2 Zeta

The Open Pit Reserves for only Zeta are shown in the table below.

**Table 5.11: Open Pit Zeta Ore Reserve as at 30<sup>th</sup> June 2014**

Classification	Tonnes	Total Copper Grade (%)	Acid Soluble Cu Grade (%)	Ag Grade (ppm)
Probable	140,000	1.20	0.19	23
Proved	1,200,000	1.20	0.20	20
<b>Proved + Probable</b>	<b>1,300,000</b>	<b>1.20</b>	<b>0.20</b>	<b>20</b>

*Notes: Estimates have been rounded to two significant figures to reflect accuracy.*

*All the estimates are on dry tonne basis.*

## 5.19 Key Changes from Previous Ore Reserves Statement

Previous to this Statement, Open Cut Ore Reserves of 7.8 Mt were estimated as at 31 May 2013 in accordance with the JORC Code (2012).

## 5.20 Discussion of Relative Accuracy/ Confidence

As Boseto is an operating mine, there is a greater confidence in the relative accuracy and confidence compared with a greenfields site for the modifying factors applied to the Mineral Resources. The site has been operating since 2012. The accuracy and confidence of the inputs are, as a minimum, of a pre-feasibility level (for the global open pit Ore Reserves).

The key factors that are likely to affect the accuracy and confidence in the Ore Reserves are:

- Accuracy of the underlying Resource Block Models;
- Changes in copper prices and sales agreements;
- Changes in metallurgical recovery; and
- Mining loss and dilution.

## Appendix 1

# Statement of Open Cut Ore Reserves for Plutus and Zeta as at 30<sup>th</sup> June 2014

### JORC 2012 Compliant Table 1

## 6. Appendix 1: JORC Table 1

Section 1 to 3 of Table 1 has been prepared by QG and can be referenced as part of the 2014 Statement of Mineral Resources for Zeta.

Note to DML: These sections need to be included in any Ore Reserves Market Release.

### 6.1 Section 1 Sampling Techniques and Data

### 6.2 Section 2 Reporting of Exploration Results

### 6.3 Section 3 Estimation and Reporting of Mineral Resources

## 6.4 Section 4 Estimation and Reporting of Mineral Reserves

This section has been prepared by RPM to support the Statement Ore Reserves for Plutus and Zeta as of June 30, 2014.

Criteria	JORC Code explanation	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li><i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></li> <li><i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resources for the Plutus and Zeta were reported by QG in September 2014.</li> <li>The Competent Person who supervised the Mineral Resource estimate is Mr Mike Stewart who is a full time employee of QG and is a member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists.</li> <li>Mineral Resources quoted in this report are inclusive of Ore Reserves.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li><i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>A site visit was undertaken to the Boseto Operation by Mr Joe McDiarmid on the 8<sup>th</sup> of May 2014.</li> <li>The mine is currently operating, mining from a number of open pits. Visits were made to the Zeta open pit, the Plutus open pits, the TSF and concentrator. The Zeta pit is nearing the end of its life, and hence future mining focused on the existing two Plutus pits and proposed extensions.</li> </ul>
<b>Study status</b>	<ul style="list-style-type: none"> <li><i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li><i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resources have been converted to Ore Reserves by means of Life of Mine plan including economic assessment.</li> <li>Key aspects of the study were technically achievable pit designs based on Pit Limit Optimisation. These designs were also assessed to ensure economic viability.</li> <li>Previous to this Statement, Open Cut Ore Reserves of 7.3 Mt were estimated as at 31 May 2013 in accordance with the JORC Code (2012).</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li><i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>The cut-off grade is based on the economic parameters developed for the Operation. The cut-off grade varies due to the change in metallurgical recovery as the ratio of acid soluble copper to total copper (TCu%) varies. In general the cut-off grade varies between 0.5 and 0.8 TCu%, depending on the ratio of acid soluble to total copper. Generally there is a lower proportion of acid soluble copper as depth increases, hence the cut-off grade decreases.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li><i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design</i></li> </ul>	<ul style="list-style-type: none"> <li>The chosen method of mining is conventional open pit mining utilising hydraulic excavators and trucks, mining 12 m bench heights, and utilising a number of flitches to minimise ore loss and waste rock dilution.</li> <li>The economic pit shell was defined using Whittle 4X pit optimisation software ("Whittle 4X") with inputs such as geotechnical parameters, ore loss and dilution, metallurgical recovery and mining costs.</li> <li>The pit optimisation was run with revenue generated only by Measured and Indicated Mineral Resources. No value was allocated to Inferred Mineral Resources.</li> <li>Whittle 4X input parameters were generally based on</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p>issues such as pre-strip, access, etc.</p> <ul style="list-style-type: none"> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>The mining dilution factors used.</li> <li>The mining recovery factors used.</li> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	<p>site operating experience and supporting technical studies.</p> <ul style="list-style-type: none"> <li>Geotechnical parameters for Zeta are inter-ramp slope angles between 39 to 45 degrees for weathered material, and 52 to 59 degrees for fresh material.</li> <li>Geotechnical parameters for Plutus inter-ramp slope angles of 31 degrees for weathered material, and 42 to 52 degrees for fresh material.</li> <li>Appropriate mining modifying factors such as ore loss, dilution and design parameters were used to convert the Mineral Resource to an Ore Reserve</li> <li>The mining dilution and recovery factors used for Zeta are 3% loss and 13% dilution, and for Plutus 2% loss and 10% dilution.</li> <li>Minimum mining width of 30 m was generally applied to the pit designs.</li> <li>As the mine is currently successfully operating as an open pit operation, no further major infrastructure is required to enable the aforementioned mining method to be successfully implemented.</li> <li>RPM has not identified or been informed of any physical constraints to mining within the lease area. No property, infrastructure or environmental issues are known to exist which may limit the extent of mining within the mining lease.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	<ul style="list-style-type: none"> <li>The Boseto processing plant uses grinding and flotation to extract a copper concentrate also containing silver. The plant has a nameplate capacity of up to 3.2Mtpa throughput. The plant processed 2.1 Mt in FY13 and 2.2 Mt in FY14.</li> <li>The technology used in the processing plant is well proven, and the plant has been operating successfully since 2012.</li> <li>The process metallurgical recovery for copper is dependent on the acid soluble copper ratio and calculated for each block in the geological model.</li> <li>Typical metallurgical recoveries for each pit are: <ul style="list-style-type: none"> <li>Zeta: 79% and 89%</li> <li>Plutus: 58% and 68%.</li> </ul> </li> <li>Zeta metallurgical recoveries are substantially higher than Plutus as it has a higher grade mineralisation and operates at greater depth with more favourable acid soluble copper ratios.</li> <li>The process metallurgical recovery for silver is fixed by material type: <ul style="list-style-type: none"> <li>oxide = 50%</li> <li>transitional = 70%</li> <li>sulphide = 75%</li> </ul> </li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation</li> </ul>	<ul style="list-style-type: none"> <li>DML appears to have sufficient space available for waste dumps to store the expected quantities of mine waste rock associated with the Zeta and Plutus Open Pit Ore Reserve. Based on testing to date no potentially</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i>	acid forming material has been identified. <ul style="list-style-type: none"> <li>Likewise, Boseto has sufficient capacity in its purpose designed and approved tailings storage facility to meet the requirements generated from mining and processing quantities listed for the Plutus and Zeta Ore Reserve. The TSF has been designed to treat up to 3 million tonnes of copper ore per year for a period of at least 10 years. It is assumed that the total tonnage of tailings produced over that time will be in the order of 30 Mt. The final height of the embankment will be around 15 - 20m depending on the in situ density achieved in the deposited tailings.</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>Boseto is currently in operation and hence has the required infrastructure in place to continue to process the Plutus and Zeta open pit Ore Reserves to form a saleable concentrate.</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of deleterious elements.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.</i></li> <li><i>The source of exchange rates used in the study.</i></li> <li><i>Derivation of transportation charges.</i></li> <li><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li><i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<ul style="list-style-type: none"> <li>The mine is currently operating as an open pit mine, and hence no material additional capital requirements are expected for mining of the open cut Ore Reserves.</li> <li>Mining operating costs and other economic inputs are based on current unit rates provided by DML. The following unit rate inputs were provided based on site operating costs: <ul style="list-style-type: none"> <li>Clear and Grub</li> <li>Topsoil removal</li> <li>Waste dump management</li> <li>Drill and blast</li> <li>Load and haul cost that varies by depth and distance to dump point/ROM pad</li> <li>Processing cost</li> <li>Site overhead costs</li> <li>Offsite overhead costs</li> <li>Power costs for diesel generator</li> </ul> </li> <li>The resulting mining costs from the build-up of unit rates of USD 1.60 to \$1.70 per tonne of rock, and total ore costs of USD21 to 22 per ore tonne mined. Offsite costs are in addition to these and are \$250 per wmt of concentrate for transport, USD92 smelting treatment charge, refining cost of USD0.092/lb Cu metal and USD0.40/oz metal.</li> </ul>
<b>Revenue factors</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<ul style="list-style-type: none"> <li>A copper price of US\$7,000/t and silver price of US\$20/oz were provided by DML and validated by RPM using published metal price forecasts.</li> <li>The royalties used include: <ul style="list-style-type: none"> <li>3% of copper net value</li> <li>5% of silver net value</li> </ul> </li> <li>The concentrate is washed onsite prior to sale to ensure levels of all deleterious elements are below specified standards.</li> </ul>
<b>Market</b>	<ul style="list-style-type: none"> <li><i>The demand, supply and stock</i></li> </ul>	<ul style="list-style-type: none"> <li>DML has an arrangement for sale of the Boseto</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>assessment</b>	<p>situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</p> <ul style="list-style-type: none"> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<p>concentrate to metal trader Transamine that has an initial term expiring in early 2015, automatically renewed for successive 12 month periods thereafter.</p> <ul style="list-style-type: none"> <li>The terms of the concentrate sale agreement dictate payment for the concentrate is based on LME pricing.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	<ul style="list-style-type: none"> <li>A schedule and economic model has been completed using the Ore Reserves published in this Statement. The inputs used are as per those stated in the relevant sections of this Statement. The assessment used a discount rate of 9.5%, as supplied by DML, which is considered appropriate by RPM.</li> <li>The base case economic model results in a positive economic outcome on a project basis as assessed by a NPV assessment.</li> <li>A sensitivity analysis has been completed. The Operation is most sensitive to metal prices. A 25% change in metal price has a 110% change in project value. A reduction in metal price of 20% results in zero overall project value given the current pit designs.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>The status of agreements with key stakeholders and matters leading to social licence to operate.</li> </ul>	<ul style="list-style-type: none"> <li>DML have established relevant agreements with local stakeholders.</li> <li>The mine plan for the operation of the Zeta and Plutus open pits includes the use of skilled expatriate workers and locally sourced skilled workers.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction</li> </ul>	<ul style="list-style-type: none"> <li>The estimate of Ore Reserves for the Plutus and Zeta Open Pits are not, to RPM's knowledge, materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that would prevent the classification of Ore Reserves.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>of the reserve is contingent.</i>	
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	<ul style="list-style-type: none"> <li>Ore Reserves have been classified based on the underlying Mineral Resources classifications and the level of detail in the mine planning. The Mineral Resources were classified as Measured, Indicated and Inferred. The Ore Reserves, based only on the Measured and Indicated Resources, have been classified as Proven and Probable Ore Reserves, respectively.</li> <li>The Ore Reserve is classified as Proved and Probable in accordance with the JORC Code, corresponding to the Mineral Resource classifications of Measured and Indicated and taking into account other factors where relevant. The deposit's geological model is well constrained. The Ore Reserve classification is considered appropriate given the nature of the deposit, the moderate grade variability, drilling density, structural complexity and mining history. Therefore it was deemed appropriate to use Measured Mineral Resources as a basis for Proven Reserves and Indicated Mineral Resources as a basis for Probable Reserves.</li> <li>No Inferred Mineral Resources were included in the Ore Reserve estimate.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Ore Reserve estimates.</li> </ul>	<ul style="list-style-type: none"> <li>RPM has completed an internal review of the Ore Reserve estimate.</li> <li>The JORC Code provides guidelines which set out minimum standards, recommendations and guidelines for the Public Reporting of exploration results, Mineral Resources and Ore Reserves. Within the JORC Code is a "Checklist of Assessment and Reporting Criteria" (Table 1 – JORC Code). This checklist has been used as a systematic method to undertake a review of the underlying Study used to report in accordance with the JORC Code.</li> <li>RPM prepared a high level LOM Plan based on the ROM mineable ore contained within the pit designs. RPM reviewed the LOM Plan for reasonableness and accuracy and confirmed that it was suitable for estimation of Ore Reserves. An economic model was prepared in conjunction with DML that confirmed the Operation to be economically viable.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of</li> </ul>	<ul style="list-style-type: none"> <li>As Boseto is an operating mine, there is a greater confidence in the relative accuracy and confidence compared with a greenfields site for the modifying factors applied to the Mineral Resources. The site has been operating since 2012. The accuracy and confidence of the inputs are, as a minimum, of a pre-feasibility level (for the global open pit Ore Reserves). <ul style="list-style-type: none"> <li>The key factors that are likely to affect the accuracy and confidence in the Ore Reserves are: <ul style="list-style-type: none"> <li>Accuracy of the underlying Resource Block Models;</li> <li>Changes in copper prices and sales agreements;</li> <li>Changes in metallurgical recovery; and</li> <li>Mining loss and dilution.</li> </ul> </li> </ul> </li> <li>The Ore Reserve has utilised all parameters provided</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>the estimate.</i></p> <ul style="list-style-type: none"> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li> <li><i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<p>by site as made available.</p> <ul style="list-style-type: none"> <li>The accuracy of the underlying Mineral Resources is defined by the Resource Category that the Mineral Resources are assigned to. Only the highest categories of Resource classification, Measured and Indicated, have been used as a basis for estimating Ore Reserves.</li> </ul>



# Zeta Underground Statement of Underground Ore Reserves as at 30 June 2014

Compliant with the JORC Code (2012)

Discovery Metals Limited


Report No: ADV-PE-60311

Date: September 2014



## Document Control Sheet

Client	
Discovery Metals Limited	
Report Name	Date
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## Executive Summary

RungePincockMinarco Limited (RPM) was commissioned by Discovery Metals Limited (“DML”) to complete an independent estimate (the “Statement”) of the Ore Reserves for the Zeta Underground Mine (“Mine”) which is part of the Boseto Copper Operation. The Statement estimates the Ore Reserves as at 30th June 2014 and has been prepared in accordance with the requirements of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code, 2012 Edition*, (“the JORC Code”) prepared by: The Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

Discovery Metals was incorporated in 2003 and acquired the Boseto Copper Deposits in 2005. The government of Botswana renewed the tenement agreement in 2008 and 2010.

The Zeta Underground mine is located approximately 80 km southwest from the town of Maun in Northwest Botswana (Africa) and is part of the Boseto Copper Operation.

The Statement is based on Mineral Resource estimates for the Zeta deposits by Mr Mike Stewart who is a full time employee of Quantitative Group (QG) and is a member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Total Mineral Resources for the Zeta deposit reported are shown below in Table 1.

**Table 1: Zeta Mineral Resource Estimate as at 30th June 2014**

Category	Mt	Cu (%)	Ag(ppm)
Measured	2.3	1.3	22
Indicated	7.7	1.3	25
<b>Subtotal Measured &amp; Indicated</b>	<b>10.0</b>	<b>1.3</b>	<b>24</b>
Inferred	8.9	1.8	26
<b>Total Mineral Resource</b>	<b>18.9</b>	<b>1.5</b>	<b>25</b>

*Notes: Mineral resource estimates include: Open Pit resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground resources reported above a cut-off grade of 1.08% Cu equivalent ( $CuEq = Cu + Ag \times 0.008546$ ) and a 4m minimum mining width. Open pit resources are constrained within the current pit design. Underground resources are constrained within the limits of geological interpretation and extend to 800m below surface. Underground resources are exclusive of open pit resources. This estimate is inclusive of such open pit and underground reserves as may be declared*

A total of 7.3Mt ROM of Underground Ore Reserves was estimated at the Zeta Underground Mine which are categorised as Proved and Probable Reserves (see Table 2). The quantities are estimated as at 30th June 2014.

**Table 2: Summary of Total Underground Ore Reserve as at 30th June 2014**

Category	Tonnage (Mt ROM)	Cu Grade (%)	Ag Grade (g/t)
PROVED	0.9	1.2	22.3
PROBABLE	6.4	1.3	24.0
<b>TOTAL ORE</b>	<b>7.3</b>	<b>1.3</b>	<b>23.8</b>

*Notes: Estimate has been rounded to reflect accuracy.  
All the estimates are on dry tonne basis.*

The Underground Ore Reserve estimate for the Zeta Underground Mine was based on the following criteria:

- Previous study modelling with respect to dilution and recovery;
- Copper metal price US\$7,000/tonne;
- Stope Production cost US\$26/tonne ore;
- Ore haulage of US\$0.95/t;
- Copper processing recovery is supported by operational reconciliation data of "MIN((99.705-(105.31\*(ASCu%/Cu%)),92)/100";
- Cut-off grade parameter of 1.08% CuEq; and
- Processing throughput 1.8 Mtpa from the Boseto processing plant.

Mineral Resources are reported inclusive of Ore Reserves (that is, Ore Reserves are not additional to Mineral Resources).

The Underground Ore Reserve Statement has been prepared by Mr Joe McDiarmid, who is a Chartered Professional and Member of the Australasian Institute of Mining and Metallurgy, and is an employee of RPM. Mr Joe McDiarmid has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person, as defined in the 2012 Edition of the Australasian Code for the Reporting of Mineral Resources and Ore Reserves. Mr Joe McDiarmid is not aware of any potential for a conflict of interest in relation to this work for the Client.

This Statement may only be presented in its entirety. Parties wishing to publish or edit selected parts of the text, or use the Statement for public reporting, must obtain prior written approval from RPM and the signatories of this Statement.

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## 1. Introduction

RungePincockMinarco Limited (RPM) was commissioned by Discovery Metals Limited (“DML”) to complete an independent estimate (the “Statement”) of the Ore Reserves for the Zeta Underground Mine (“Mine”). The Statement estimates the Ore Reserves as at 30th June 2014 and has been undertaken in compliance with the requirements of the reporting guidelines of the 2012 Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (“JORC Code”).

Discovery Metals was incorporated in 2003 and acquired the Boseto Copper Deposits in 2005. The Zeta and Plutus Open Pits have been in operation since 2012 and a Definitive Feasibility Study (DFS) into proceeding underground at Zeta was completed in 2012.

The Zeta Underground Mine is located approximately 80km southwest from the town of Maun in Northwest Botswana (Africa) and is part of the Boseto Copper Operation owned by DML.

This Statement is based on the Mineral Resource estimates for Boseto Copper Operation prepared by Quantitative Group (QG) as at 30th June 2014.

### 1.1 Terminology

RPM has adopted the following JORC terms for the reporting of Mineral Resources and Ore Reserves:

- **Mineral Resources** as used in this Statement are the same as “Mineral Resource” as defined in the JORC Code and “Geological Resources” and “In Situ Resources”, which are common terms used in the industry;
- **Measured, Indicated and Inferred Resources** are categories of Mineral Resources and are defined in the JORC Code to reflect the confidence in the underlying geological data;
- **Ore Reserves** as used in this Statement are the same as “Ore Reserves” in the JORC Code and “Mining Reserves”, a common term used in the industry;
- Ore Reserves in the JORC Code are subdivided into **Proved and Probable** to reflect the confidence in the underlying resource data and mine planning detail; and
- Mineral Resources are reported **inclusive** of Ore Reserves, (that is, Ore Reserves are not additional to Resources).

Additional terminology applied within this Statement includes the following:

- **Geological Model** (or “In Situ” Model) is the computerised three dimensional representation of the Gold deposit based on topographic survey data, Gold seam data derived from outcrop, drill hole or other data points, including Gold thickness and quality;
- **Mineable In Situ Ore** (non-JORC terminology) is used in this Statement to refer to in situ ore within the mine designs; and
- **Run of Mine (ROM) Ore** (non-JORC terminology) is used in this Statement to refer to the mineable in situ ore after application of geological and mining ore losses and waste rock dilution.

## 1.2 Location

The Zeta Underground mine is located approximately 80km southwest from the town of Maun in northwest Botswana (Africa) and is part of the Boseto Copper Operation owned by DML.

## 1.3 Capability and Independence

This Statement was prepared on behalf of RPM by the signatory to this Statement. RPM operates as an independent technical consultant providing resource evaluation, mining engineering and mine technical valuation services to the resources and financial services industry. RPM believes its independence has in no way been compromised.

RPM has been paid, and has agreed to be paid, professional fees, by DML for its preparation of this Statement.

## 1.4 Information Sources

The contents of this Statement have been created using data and information provided by or on behalf of DML. In RPM's opinion, the information provided was reasonable and nothing discovered during the preparation of this Statement suggested that there was any material error or misrepresentation in respect of that information. Information generated by third parties, consultants or contractors to DML has not been independently validated by RPM through the generation of new work or new data.

The Statement has been produced by RPM using information that is available to RPM as at the date stated on the cover page. RPM is under no obligation to update the information contained in the Statement at any time after the date shown on the cover page.

Key sources of data included:

- The Boseto Copper Operation – Zeta, Plutus and Zeta North East Resource Estimates (QG);
- Internal Memorandum – Regional and Local Geology of the Zeta Deposit;
- Site based mine designs and calculation of tonnages based on those designs;
- Mining and processing related costs based on operating experience at the mine and mill;
- Mining costs based on contractor quotations;
- RPM Resources and Reserves Site Visit Document; and
- DML Mining Website (<http://www.discoverymetals.com>).

## 1.5 Information About This Document

This Statement has been prepared by or on behalf of RPM solely for DML. Whilst all copyright and other intellectual property rights in this Statement are owned by and are the property of RPM, RPM grants DML a non-transferable, perpetual and royalty-free license to use this Statement for its internal business purposes and to make as many copies of this Statement as it requires for those purposes.

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This document speaks only as of the date of the report and RPM has no duty to update it.

## 1.6 Inherent Mining Risks

Mining is carried out in an environment where not all events are predictable.

Whilst an effective management team can identify the known risks and take measures to manage and mitigate those risks, there is still the possibility for unexpected and unpredictable events to occur. It is not possible therefore to totally remove all risks or state with certainty that an event that may have a material impact on the operation of a mine, will not occur.

It is therefore not possible to state with certainty, forward-looking production and economic targets, as they are dependent on numerous factors that are beyond the control of RPM and cannot be fully anticipated by RPM. These factors include but are not limited to, site-specific mining and geological conditions, the capabilities of management and employees, availability of funding to properly operate and capitalise the operation, variations in cost elements and market conditions, developing and operating the mine in an efficient manner. Unforeseen changes in legislation and new industry developments could also substantially alter the performance of any mining operation.

## 2. Competent Persons Statement

The information in the report to which this Competent Persons Statement is attached, relates to the Ore Reserves of the Zeta Underground Mine, and is based on information compiled and reviewed by **Mr Joe McDiarmid**, who is a Chartered Professional Member of the Australasian Institute of Mining and Metallurgy, and is an employee of RPM. Mr Joe McDiarmid has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person, as defined in the 2012 Edition of the Australasian Code for the Reporting of Mineral Resources and Ore Reserves.

Mr Joe McDiarmid is not aware of any potential for a conflict of interest in relation to this work for the Client.



.....

**Joe McDiarmid** (B.Eng.(Mining), MAusIMM(CP))

The estimates of Ore Reserves presented in this Statement have been carried out in accordance with the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (December, 2012).

### 3. Project Description

#### 3.1 Property Location

The Zeta Underground mine is located approximately 80km southwest from the town of Maun in northwest Botswana (Africa) and is part of the Boseto Copper Operation owned by DML (refer **Figure 3.1**).

#### 3.2 Property Area

The Zeta deposit is located within the Boseto Copper Operation owned by DML.

The Boseto Copper Operation is located on mining lease number 2010/99L to mine for Copper and Silver. This lease was issued in December 2010 and expires on 19<sup>th</sup> of December 2025.

The tenement location is shown in **Figure 3.2**.

#### 3.3 Climate

Botswana rainfall tends to be erratic, unpredictable and regional. The summer season commences in November and ends in March. Winter commences in May and ends in August and is referred to as the “dry season” with minimal rainfall.

Average maximum summer temperatures reach 39°C during October with maximum peak temperatures reaching 46°C. The relatively dry winter periods reach average winter maximums of 26°C with overnight lows of 0°C.

#### 3.4 Current Operations

DML commenced mining at Plutus and Zeta open pit operations in 2012. Ore is processed on site to produce a concentrate. DML has a contract to sell this concentrate with Transaminvest SA.

Boseto operations had produced 14.8kt of copper and 37.7kt of concentrate at 30 June 2013.

Figure 3-1: Regional Location Plan

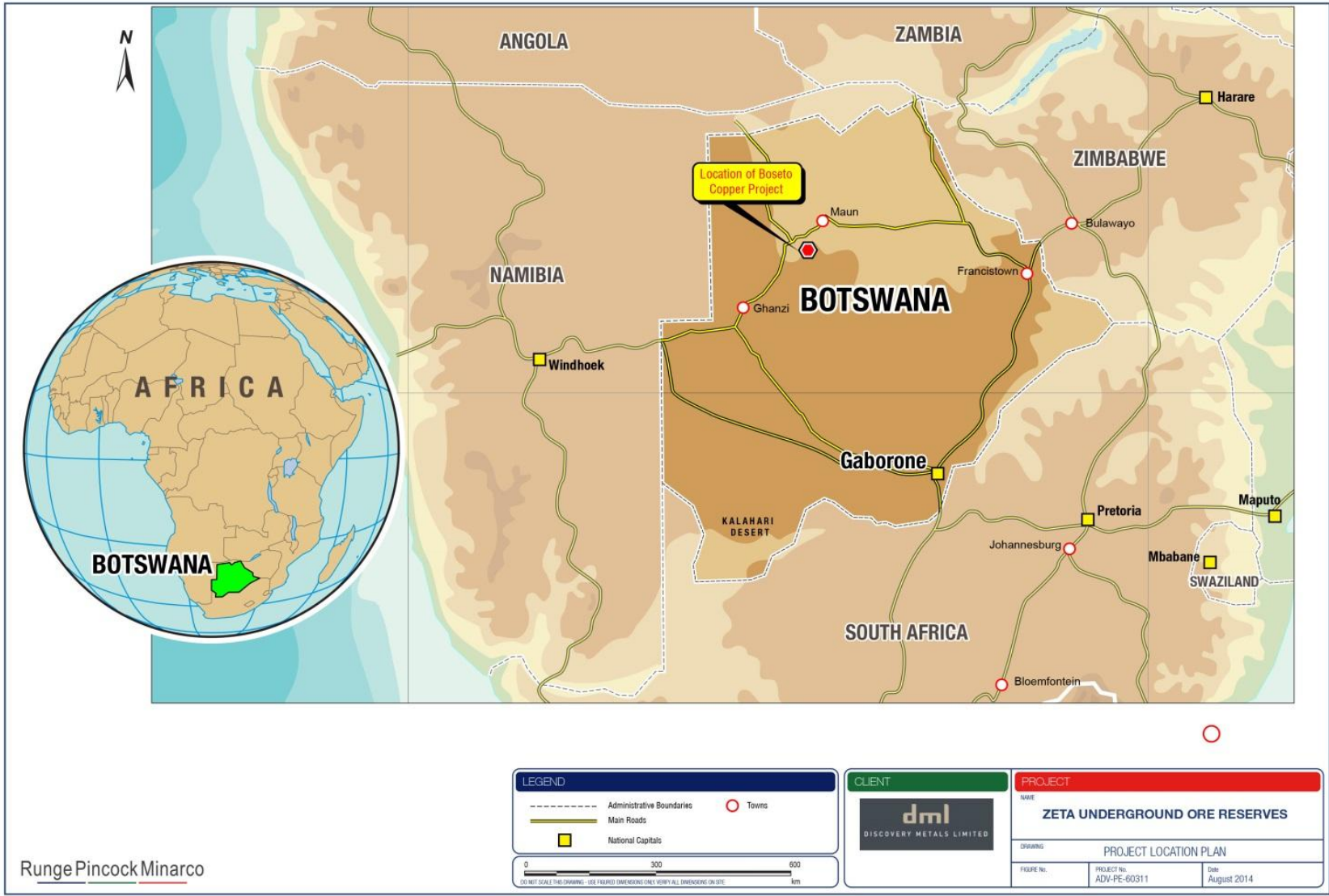
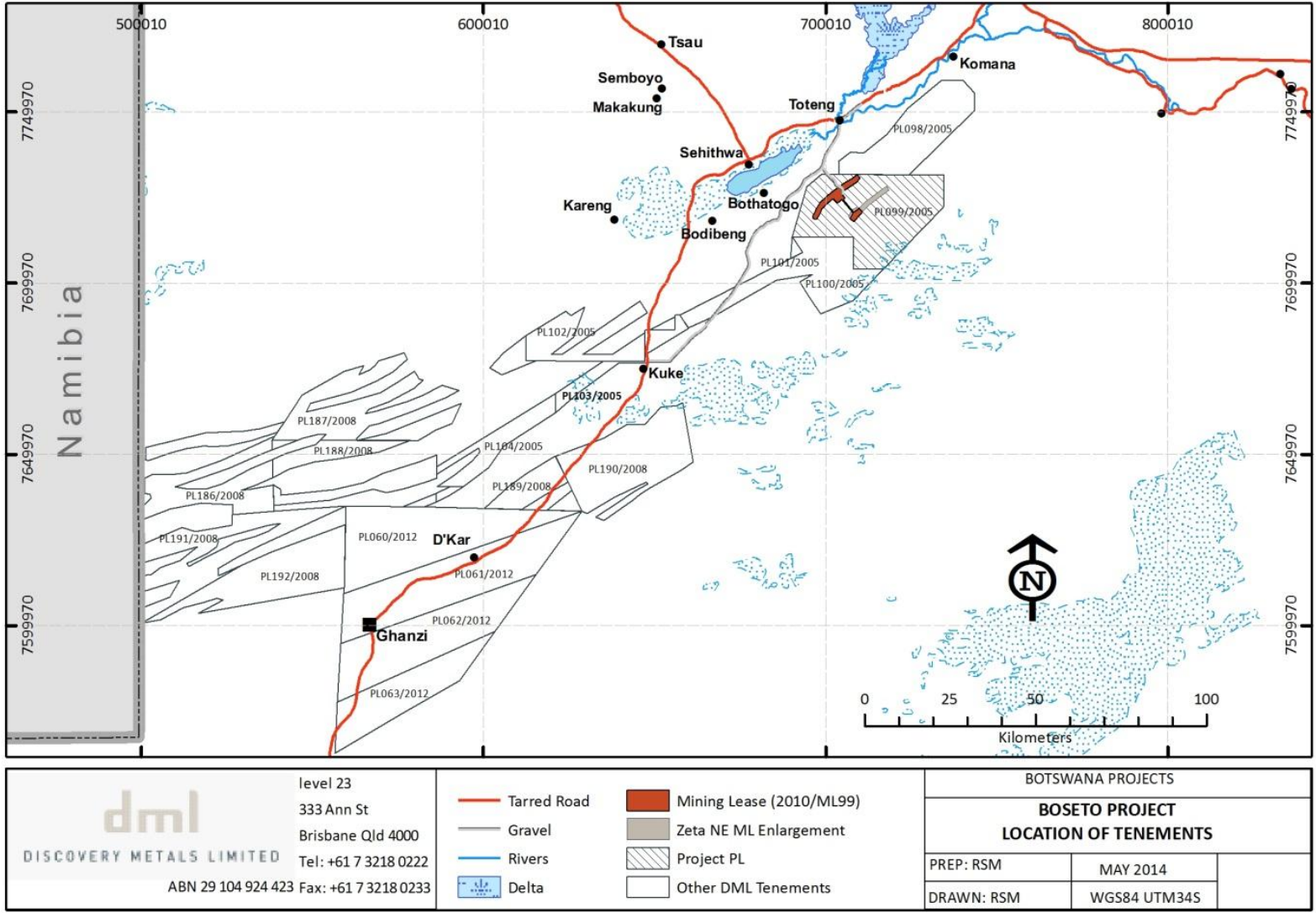


Figure 3-2: Tenement Location



## 4. Geology, Ore Quality and Resources

### 4.1 Geology and Mineralisation

#### 4.1.1 Regional Geology

The area DML are exploring and mining in the Kalahari Copper belt contains four units: the basement comprising the Kgwebe Volcanics, overlain by the Ngwako Pan Sandstone; the D'Kar Formation; and the Mamuno Formation. These are unconformably overlain by Karoo-age sedimentary rocks and basalts, and cut by Karoo-age dolerite dykes. The whole area is overlain by varying thickness of Kalahari Sands.

Structurally the area is a fold and thrust belt with extensive NE – SW trending thrusts controlling folding. It can be divided into three structural zones, which more or less correspond with the three DML exploration zones. In the NE (the Boseto Zone), thrusting dominates with a number of broad anticlines and narrow synclines. Mineralisation tends to occur on the NW limb of the anticlines. In the SW (SW Kalahari Zone), the structure is dominated by broad anticlines separated by open synclines.

The majority of known mineralisation in the Kalahari Copper belt is hosted by siltstone in the basal D'Kar Formation. The main examples of this are Zeta, ZNE and Plutus. However several deposits (NE Mango 1 and NE Mango 2) have the mineralisation hosted by limestone several tens of metres above the base of the D'Kar Formation. The unit below the D'Kar Formation, the Ngwako Pan Formation, consisting of sandstone, hosts minor mineralisation just below the D'Kar Formation. The NE Hinge deposit of Cupric appears to be the only deposit with significant tonnage within the Ngwako Pan Formation however, but this is important to note regionally. One mineral occurrence, Aphrodite, hosts mineralisation about 200 m above the base of the D'Kar Formation, in a shear zone within the D'Kar Formation.

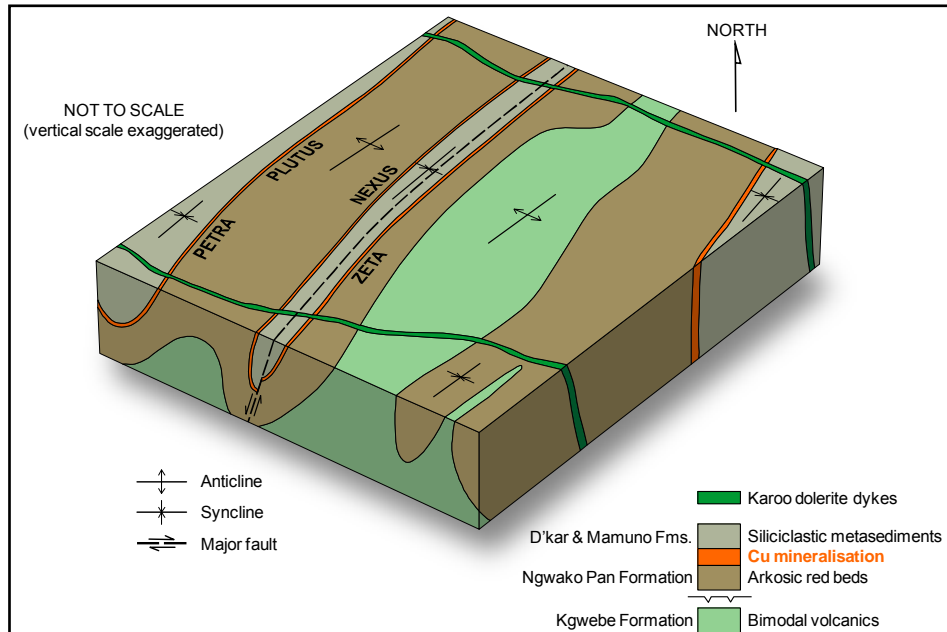
The mineralisation is marked by a mineralogical and geochemical zoning. From oxidised to reduced it is; hematite, chalcocite, bornite, chalcopyrite, pyrite, galena (Pb), sphalerite (Zn), and barite. This zoning is important in exploration as Cu-Zn in soil anomalies are typically associated with mineralisation.

#### 4.1.2 Local Geology

The local interpretation of geology at Boseto is that the mineralised D'Kar contact is folded in a series of upright tight folds. Zeta, ZNE and Plutus lie on west-dipping limbs while Nexus lies on the east-dipping limb between (see Figure 4-1). More recent drilling has traced the D'Kar contact south from Plutus around an anticlinal fold closure and northwards to Nexus.



**Figure 4-1: Previous schematic interpretation of Boseto geology (from Snowden 2011)**



## 4.2 Mineral Resource Estimate

The Statement is based on Mineral Resource estimates for the Zeta deposits by Mr Mike Stewart who is a full time employee of Quantitative Group (QG) and is a member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Total Mineral Resources for the Zeta deposit reported are shown below in Table 1.

**Table 3: Zeta Mineral Resource Estimate as at 30th June 2014**

Category	Mt	Cu (%)	Ag(ppm)
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<b>Subtotal Measured &amp; Indicated</b>	<b>10.0</b>	<b>1.3</b>	<b>24</b>
Inferred	8.9	1.8	26
<b>Total Mineral Resource</b>	<b>18.9</b>	<b>1.5</b>	<b>25</b>

*Notes: Mineral resource estimates include: Open Pit resources reported at cut-off grades of 0.5% Cu in fresh rock, 0.7% Cu in transitional material, and 1.0% Cu in oxide; and Underground resources reported above a cut-off grade of 1.08% Cu equivalent ( $CuEq = Cu + Ag \times 0.008546$ ) and a 4m minimum mining width. Open pit resources are constrained within the current pit design. Underground resources are constrained within the limits of geological interpretation and extend to 800m below surface. Underground resources are exclusive of open pit resources. This estimate is inclusive of such open pit and underground reserves as may be declared*



## 5. Underground Mining Reserve Estimate

### 5.1 Approach

The type and level of study undertaken is to enable Mineral Resources to be converted to Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.

Much of the information used for this Study is based on the existing DFS and operational data supplied by DML from the Mine. Where sufficient data was not available further study was undertaken to ensure that the mine plan is technically achievable and economically viable to a Pre-Feasibility Study level of accuracy.

The following sections describe the process used in modifying the Mineral Resources into Ore Reserves. The order generally follows “Table 1 - Check List of Assessment and Reporting Criteria” in the JORC Code. This process includes defining viable stope limits and applying various mining, cost, revenue and similar factors to the Mineral Resources to estimate Ore Reserves.

The process adopted for completing the Statement is described below.

- Mining modifying factors for ore loss and dilution were taken from the previous 2012 DFS and reviewed by RPM for reasonableness;
- Based on the economic ore cut-off grade, the geological model that formed the basis of the Mineral Resource estimate was examined to define the economic underground mining limits;
- Within the economic mining limits, ore stope and development designs were prepared to reflect practical extraction of the orebody;
- The in situ ore quantity within the ore stope and development designs was then estimated using the Mineral Resource geological model;
- The ROM ore quantity within the designs was then calculated by applying mining modifying factors;
- A ‘top down’ Life-of-Mine (LOM) Plan was completed to confirm the quantities of ROM ore to be directed to the process plant and the quantities of product made. Only the ROM ore directed to the process plant can be converted to Ore Reserves. The LOM Plan also confirmed the practicality of the proposed mining development;
- The underground Ore Reserves were categorised as Proved and Probable based on the underlying Mineral Resource categories and the current level of detail in the mine planning;
- The economic viability of the Mine was examined by a total Project economic model; and
- Checks were done and the results and supporting data are documented in this Statement.

### 5.2 Mineral Resource Estimate

The Mineral Resource estimate that underlies the Ore Reserves estimate is summarised in Section 4 of this Statement. The Competent Person who supervised the Mineral Resource estimate was Mr Mike Stewart who is a full time employee of Quantitative Group (QG) and is a member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists.

Mineral Resources quoted in this report are inclusive of Ore Reserves.

### 5.3 Site Visit

A site visit was undertaken at the Zeta Mine by Mr Joe McDiarmid on the 8th of May 2014.

### 5.4 Cut-off Grade Parameters

A Copper Equivalence cut-off grade has been calculated for each block within the block model and is calculated using the following formula:

$$\text{CuEq\%} = \text{Cu (\%)} + 0.0085455550 \times \text{Ag (g/t)}$$

The mineable economic cut-off grade used for the Zeta Underground is 1.08% in-situ Copper equivalent.

### 5.5 Mining Limits

RPM has not identified any physical constraints to mining within the lease area. No property, infrastructure or environmental issues are known to exist which may limit the extent of mining. The mining Ore Reserve process was restricted to only apply to Measured and Indicated Mineral Resources.

### 5.6 Mining Modifying Factors

The Underground Ore Reserves consist of proposed development and sub-level caving operations. A three-dimensional view of the proposed sub-level cave and development included as an Appendix.

Key mining modifying factors applied are based on previous studies and contractor inputs:

- The chosen method of mining is by sub-level cave stoping;
- The geotechnical parameters used are per the 2012 DFS;
- Development has a 100% recovery and 10% dilution applied;
- Stopping has 90% recovery and 15% Dilution applied; and
- A minimum mining width of 4m is adopted.

### 5.7 Metallurgical Modifying Factors

The Boseto processing plant is targeting 3.2Mtpa throughput. The process path is:

- The comminution circuit comprises three stage crushing and ball milling. Ore is trucked from the mine into either ROM stockpiles and then rehandled by front-end-loader into a bin, or tipped directly into the bin. Ore gravitates via an apron feeder into a jaw crusher. Crushing incorporates a three stage crushing plant with a crushing capacity of 500dtph to product size (P80) of 15mm;
- Flotation includes a flash flotation cell and separate sulphide and oxide flotation circuits with copper sulphide rougher flotation, regrinding of the unit cell concentrate in a regrind circuit to a product size (P80) size of 38µm. This is followed by two stages of sulphide cleaning and then oxide copper

flotation of the sulphide rougher tails followed by three stages of cleaning of the oxide rougher concentrates;

- Concentrate handling includes dewatering of both the oxide and sulphide copper concentrates via a concentrate thickening circuit and filtration of the concentrate via a single vertical plate filter; and
- Disposal includes tailings thickening in a 20m diameter thickener with disposal of the underflow to the Tailings Storage Facility (TSF).

The process metallurgical recovery for copper is dependent on the S:Cu ratio and calculated for each block using the following formula " $\text{MIN}((99.705-(105.31*(\text{ASCu\%/Cu\%})),92)/100$ ".

The process metallurgical recovery for silver is fixed by material type:

- oxide = 50%;
- transitional = 70%; and
- sulphide = 75%.

## 5.8 Cost and Revenue Factors

Mining operating costs are based on previous DFS report and updated Contractor and historic costs.

The main cost factors are:

- Stope production cost US\$26/tonne ore
- Ore development costs are US\$4,165/m
- Capital development costs are US\$3,654/m
- The processing costs are US\$6.00/t ore
- Administration costs are US\$0.64/t ore

Government royalties are:

- Copper = 3% of Net Value
- Silver = 5% of Net Value

A copper price of US\$7,000/t and silver price of US\$20/oz were provided by DML and validated by RPM using published metal price forecasts.

A schedule and economic model has been run on the Life of Mine (LOM) plan using all the Zeta Mineral Resource and a separate schedule and economic model has been run on just the material above the 625 mRL that contains mainly the Proved and Probable material.

## 5.9 Other Relevant Factors

The estimate of Ore Reserves for the Zeta Underground Mine are not to RPM's knowledge materially affected by any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors. Zeta is currently been mined as an Open Pit. The Final Open Pit design incorporates the underground design.

## 5.10 Classification

Ore Reserves have been classified based on the underlying Mineral Resources classifications and the level of detail in the mine planning. The Mineral Resources were identified as Measured, Indicated and Inferred. The Ore Reserves, based only on the Measured and Indicated Resources have been classified as Proved and Probable Ore reserves. Volumes of material classified as Inferred within the Mineral Resources that have been included in the shapes that define the Ore Reserves have been classified as waste with a zero grade. The classification of Probable Ore Reserves has been determined due to uncertainties with respect to grade calculations which depend heavily on the geometrical shape of the high grade material and the dilution necessary to be able to mine the ore.

## 5.11 Audits and Reviews

The JORC Code provides guidelines which set out minimum standards, recommendations and guidelines for the Public Reporting of exploration results, Mineral Resources and Ore Reserves. Within the code is a "Checklist of Assessment and Reporting Criteria" (Table 1 – JORC Code). This checklist has been used as a systematic method to undertake the review of JORC compliance and is presented in the Appendix.

RPM prepared a high level LOM Plan based on the ROM mineable ore contained with the underground design stopes and development. RPM reviewed the LOM Plan for reasonableness and accuracy and confirmed that it was suitable for estimation of Ore Reserves. An economic model was prepared in conjunction with DML that confirmed the Mine to be economically viable.

In addition, checks were done to validate the Mineral Resources to Ore Reserves calculation within an Excel spread sheet. The difference between the total quantity of Measured and Indicated Mineral Resources and the Ore Reserves is explained by the following:

- There are ore losses and dilution gains in the copper Ore Reserve estimation process;
- There is some Measured and Indicated Resources in the mine design that could not be considered Ore Reserves as it would result in product grades below the target specifications, or was not economically viable to mine.

The outcomes of a review of the Ore Reserve estimate against the JORC Code requirements is summarised in Table 4. The review and cross reference against the JORC Code check list showed no material omissions. RPM concludes the Ore Reserves have been estimated and reported in accordance with the JORC Code.

## 5.12 Results

A total of 7.3Mt ROM of Underground Ore Reserves was estimated at the Zeta Underground Mine which are categorised as Proved and Probable Reserves (see Table 4). The quantities are estimated as at 30th of June 2014.

**Table 4: Summary of Underground Ore Reserves as at 30th June 2014**

<b>Category</b>	<b>Tonnage (Mt ROM)</b>	<b>Cu Grade (%)</b>	<b>Ag Grade (g/t)</b>
PROVED	0.9	1.2	22.3
PROBABLE	6.4	1.3	24.0
<b>TOTAL ORE</b>	<b>7.3</b>	<b>1.3</b>	<b>23.8</b>

*Notes: Estimate has been rounded to reflect accuracy.  
All the estimates are on dry tonne basis*

## Appendix 1

### **Zeta Underground Mine**

#### JORC 2012 Compliance Table 1

### 5.13 Section 1 Sampling Techniques and Data

This Section of Table 1 was provided by QG as part of the Mineral Resource estimate Statement. RPM has included these sections in its entirety to ensure that all relevant sections of Table 1 are included in this report.

Criteria	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>No surface sampling techniques are used in Resource estimates.</li> <li>Diamond core is ½ core sampled after cutting. Samples are crushed and pulverised to produce the aliquots required for analysis.</li> <li>RC samples (1m length) are reduced to 3kg at the drill rig using a cone splitter. This is further reduced at the laboratory to 800g before pulverization in a mixer mill to yield a bagged pulp sample, from which a number of aliquots are extracted for different analytical processes.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>The majority of earlier drilling was by diamond coring, with only a small number of RC holes (52 of 487).</li> <li>RC grade control commenced in June 2012, and at the time of estimation a total of 359 angled RC holes had been completed. These average 37m in length, with the longest being 84m.</li> <li>In the Zeta pit area, narrowing of the pit towards the base has meant that RC drill platforms are restricted and the lower sections of the pit have largely been mined without systematic RC grade control drill sampling. In the area of the north ramp, vertical holes were drilled off the ramp, but this orientation is suboptimal for sampling of a steeply dipping ore body.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Core recovery within the Zeta mineralised zones averages 90.3%. No discernible relationship exists between core recovery and either sample length or Cu grade.</li> <li>No systematic recording of RC sample recovery has been undertaken. Sample recovery observed at the rig was generally adequate, although was somewhat lower than optimal. The RC grade control rig in use was not fitted with dust suppression, and loss of fines is higher than desirable.</li> <li>A detailed examination was made of RC versus Diamond core sampling to investigate the possibility of sampling biases in RC drilling. No evidence of any systematic difference in RC intercept grades or intercept thickness was identified in this deposit, or any of the Boseto deposits.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>All drill holes have been geologically logged. Logging is focused on identification of underlying stratigraphic units. Specific logging of mineralization is not undertaken. While logging provides a guide to subsequent interpretation of mineralization it is not of adequate resolution for defining estimation domains, and these rely on grades of Cu, Ag and S.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>Diamond drill core is sawn longitudinally and half core samples submitted for analysis. All subsequent sample preparation was undertaken at commercial laboratory facilities in Johannesburg and Perth using industry standard crushing and pulverizing equipment and protocols. QG have not directly reviewed pulp duplicate data reported by the laboratory, but scatter plots presented in earlier reports indicate that these data are of suitable precision for use in resource estimates.</li> <li>RC grade control drill samples are initially split at the rig using a cone splitter. Samples are prepared and analysed at the onsite laboratory. Samples are crushed to 2mm, split to 800g using riffle splitter, pulverised to 90% passing 75µm.</li> <li>Field duplicate samples are collected at a ratio of 1:20. Laboratory duplicates are collected at the ratio of 1:25.</li> <li>Laboratory duplicates show a typically high level of precision with a coefficient of variation (CV) for Cu of 4% for samples greater than 10x level of detection.</li> <li>The precision of field duplicates is only moderately good for a base metal deposit (22% CV for Cu), and improvement should be investigated.</li> </ul>
<b>Quality of assay data and</b>	<ul style="list-style-type: none"> <li>Information about the analytical methods and quality control measures applied to resource drilling up until mid-2012 is contained in previous resource reports. No significant issues were noted, and QG concur with the conclusion that data is of</li> </ul>



Criteria	Commentary
<b>laboratory tests</b>	<p>acceptable quality for use in resource estimates.</p> <ul style="list-style-type: none"> <li>Analysis of RC grade control drilling is normally carried out at the onsite laboratory facility managed by Set Point Laboratories. From Sept 2013, approximately 50% of samples were assayed off site at the Set Point laboratory in Johannesburg.</li> <li>In March 2014, DML terminated their contract with Set Point Laboratories, and appointed an alternative provider to manage and run the on-site laboratory. The majority of new data included in this estimate was assayed by Set Point on site, with a smaller quantity assayed at their lab in Johannesburg.</li> <li>The following analytical methods are employed: <ul style="list-style-type: none"> <li>Cu and Ag - 3 acid digest with AAS finish;</li> <li>Acid Soluble Cu (CuAS) - sulphuric acid digest with AAS finish;</li> <li>S – LECO (CS-230)</li> <li>Acetic acid soluble Cu (CuAAA) – Acetic acid digest with AAS finish.</li> </ul> </li> <li>DML insert commercial certified reference materials (CRM's) and blanks at a ratio of 1:20. Six main CRM's were submitted – three sourced from AMIS (African Minerals Standards), and three from OREAS.</li> <li>Interpretation of the results of CRM's is hampered by a large number of mis-labelled samples. Once the most obvious errors have been filtered out or re-assigned, there does not appear to be any significant problem with analytical accuracy.</li> <li>Analytical precision achieved by the on-site lab is poor, particularly for the AMIS CRM's. It is not clear whether this is the result of poor laboratory practice or poor homogeneity of the CRM's in use.</li> <li>Only the acceptable level of accuracy and high density of grade control sampling make RC grade control data acceptable for use in resource estimates. The poor quality of data collected during 2013/14 has been taken into account in classification. Only a small quantity of new data has been added to Zeta, but no upgrade of classification was applied to blocks informed by the new drilling.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>As far as QG are aware, no verification by independent assaying has been undertaken. However, the analytical grades are consistent with the tenor of mineralization observed which is confirmed by subsequent phases of drilling and production.</li> <li>When the thickness and grade of RC drill intercepts are compared to diamond core intercepts within a common volume, no systematic differences are apparent.</li> <li>The only adjustment to assay data is translation between units of % and ppm for copper.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Drilling completed by DML has been located using DGPS. Down hole surveys are dominantly collected using electronic single shot instruments. Diamond holes are mostly surveyed at regular intervals downhole. RC holes generally only have an in rods dip survey near collar, but as holes are short and at a high angle to structure this is considered adequate.</li> <li>Topographic survey data was obtained from LIDAR survey, and has an accuracy of +/- 0.6m. Post commencement of mining, surface pickups are made using DGPS.</li> <li>The grid system used is WGS84, Zone 34K.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Intercept spacing at Zeta is variable. The broadest regular spacing is some 200m along strike by 60m vertical, which is progressively in-filled to 100m by 30m with some areas to 50mx 30m. Grade control drilling intercepts are spaced at 25m along strike by approximately 10m vertical.</li> <li>Geological continuity is very high. This is seen in a very consistent planar geometry of mineralization over 10's of km, and is confirmed by exposure from open pit. Continuity of grades within the mineralised horizons is typically lower, which can be seen as fluctuations around a fairly consistent average grade.</li> <li>Samples are composited to 1m prior to estimation.</li> </ul>
<b>Orientation of data in relation to</b>	<ul style="list-style-type: none"> <li>The vast majority of drilling crosses the mineralization at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralization.</li> </ul>

Criteria	Commentary
<b>geological structure</b>	
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The chain of custody applied to older diamond core sampling is not known. RC samples are collected in plastic bags, bar-coded, sealed using zip-lock fasteners and submitted in batches.</li> <li>Sample security is not considered a major issue given the nature of the mineralization, and the status of the project as a producing owner operated mine.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>Previous inspections of RC sampling conducted by CS-2 Pty Ltd and Snowden recommended that the sampling equipment and protocols be reviewed, improved and documented. This recommendation remains in place.</li> </ul>

#### 5.14 Section 2 Reporting of Exploration Results

This Section of Table 1 was provided by QG as part of the Mineral Resource estimate Statement. RPM has included these sections in its entirety to ensure that all relevant sections of Table 1 are included in this report.

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>The Zeta deposit is located on Mining Lease No. 2010/99L, expiring on 19<sup>th</sup> December 2025.</li> <li>DML has 100% ownership of the lease and Boseto Copper Project as a whole.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Since the late 1960s, there have been at least five phases of exploration in the Kalahari Copper Belt prior to the current exploration by Discovery Metals Ltd.</li> <li>Previous owners include: Anglovaal South West Africa and JV partners, DeBeers, Tsumeb Corporation, US Steel Corporation, US Steel Corporation and JV partners Newmont South Africa Ltd and INCO of Canada, Anglo American Prospecting Services (AAPS), Glencore International PLC, Kalahari Gold and Copper (KGC) and JV partner Delta Gold.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>The Zeta deposit, within the Ghanzi-Chobe Fold Belt (Kalahari Copper Belt) of northwest Botswana. The mineralisation style of the Zeta deposit is that of a sediment hosted, stratiform redox copper and silver deposit. Mineralisation is characterised by predominantly chalcopyrite with lesser chalcocite, bornite, malachite, pyrite, sphalerite and galena.</li> <li>More detail is in Section 3 below.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A total of 869 drillholes were used for the resource estimate – 43 of these were pre-DML. A drillhole listing is in the full Technical Report and accompanying database.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>Exploration Results are not being reported here – sample compositing for estimation was to 1m down hole lengths.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>The vast majority of drilling crosses the mineralization at a moderate to high angle (&gt;45°) and provides excellent definition of the margins of mineralization.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>See Figure 1 above.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Exploration Results are not being reported here. The Mineral Resource estimate itself is a weighted and balanced estimate of the contained mineralization.</li> </ul>

Criteria	Commentary
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>This information (geological mapping, metallurgical testwork, bulk density data) is included in Section 3.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The Exploration Targets identified in the vicinity of the Zeta Mineral Resource will be tested as part of future surface drilling programs, the timing of which will depend on the ranking compared to other targets and the priority assigned to these targets. These Targets are shown in Figure 1.</li> </ul>

### 5.15 Section 3 Estimation and Reporting of Mineral Resources

This Section of Table 1 was provided by QG as part of the Mineral Resource estimate Statement. RPM has included these sections in its entirety to ensure that all relevant sections of Table 1 are included in this report.

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Raw data is stored in an underlying acQuire database, established in October 2012. The acQuire database structure contains numerous internal consistency checks, as do the softwares into which drill-holes were imported (Minesight, Datamine, Surpac and Leapfrog).</li> <li>Data was provided to QG in the form of separate collar, survey, assay and lithology files in ASCII CSV format. A number of iterations of data extraction were required due to inconsistency between extracted versions. QG made independent checks of the data extraction process by referring records back to the underlying AqQuire database.</li> <li>Previous authors have performed checks from database back to original records. No further checking against raw data was carried out as part of this estimate.</li> <li>QG note that database software chosen by DML is powerful but requires a high level of knowledge/proficiency to use effectively. It is essential that DML properly resource the management of this database in order to reduce the risk presented by inadvertent misuse. QG recommend that a thorough independent review of database integrity and management be undertaken as a matter of urgency.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Mike Stewart visited site between Tuesday 25 and Friday 29<sup>th</sup> September, 2012.</li> <li>Inspections were made of the geology department, exploration core storage, grade control drilling operations, Zeta open pit mining area, Zeta low grade stockpiles and ROM stockpile area and the processing plant.</li> <li>Discussions were held with senior site Geological, Mining, Processing, and Laboratory staff, and covered the following: <ul style="list-style-type: none"> <li>mine geology practices and reconciliation;</li> <li>data management and ore blocking</li> <li>visits to the RC grade control rig;</li> <li>a visit around the Set Point Laboratory facility.</li> <li>mining practices, blasting and mine planning;</li> <li>an overview and tour of the process plant;</li> </ul> </li> <li>All staff were open, receptive and helpful during discussions.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>The general disposition of mineralization is remarkable for its continuity and tabular planar geometry, being dominantly hosted in a single thin stratigraphic horizon continuous over many 10's of kilometers. At Zeta, the footwall contact is reliably marked by a pronounced jump in grade. It is also clearly apparent in open pit exposure being marked by a change in blockiness and colour.</li> <li>The hanging wall contact is also generally well-marked by a pronounced step in grade. QG used a threshold of ~0.3% Cu to define a mineralised envelope, also</li> </ul>

Criteria	Commentary
	<p>taking into consideration the thickness of mineralization and consistency of geometry.</p> <ul style="list-style-type: none"> <li>An internal zone of consistently higher Cu grades was also differentiated, using a threshold of ~1.5%Cu. Again lateral thickness changes, and continuity of geometry internal to the enclosing 0.3% envelope, were taken into consideration as well as grade.</li> <li>Analysis of grade behavior across defined boundaries provides strong support for the choice for thresholds used.</li> <li>The most difficult aspect of mineralisation to model is weathering. Surfaces have been defined for the base of complete oxidation (marked by absence of sulphides), and the top of fresh (marked by start of partial oxidation of sulphide species). Definition of these surfaces is complicated by both their high spatial variability, and by the position of drill intersections (adjacent sections intersect mineralisation at the same RL, providing poor vertical control on the position of sub-horizontal surfaces).</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The mineralised stratigraphic horizon at Zeta has been identified by drilling over a strike length of some 28km. Wireframe interpretations have been extended along this entire length. In the centre of the deposit, mineralization has been identified to a depth of &gt;600m and is open at depth. On average the zone of Cu mineralization is some 5.5m wide.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>Copper, silver, sulphur, acid soluble copper, acetic acid soluble copper and density were estimated using ordinary kriging into blocks of 5m East, by 25m North by 10m RL. These block dimensions were selected to match the existing grade control model definition. Sub-cells to a minimum dimension of 0.625m E by 6.25m N by 1.25m RL were used to represent volume. Estimates were performed in Surpac software, while exploratory data analysis was undertaken in Isatis software.</li> <li>The concentrations of two hydrated copper oxide mineral species (malachite and chrysocolla) were also estimated; malachite is estimated from an acetic acid Cu (CuAAA) assay, on the assumption that all/only Cu soluble in acetic acid is due to malachite, while chrysocolla content is calculated from the difference between CuAS and CuAAA.</li> <li>Estimation parameters were chosen after taking into account output kriging estimation statistics, variogram models and data geometry.</li> <li>Grade estimates were constrained separately within a high grade (&gt;1.5%Cu) and low grade (&gt;0.3% Cu) domains. All variables except copper were also estimated separately above the interpreted base of complete oxidation.</li> <li>Top cuts were applied to some variables based on examination of the histogram, and the spatial context of the outlier values.</li> <li>Definition of oxidation state for categorization of material types is based on interpreted weathering surfaces.</li> <li>Estimates were validated visually in 3D view using Surpac and Datamine, by examining reproduction of global estimation statistics, and by comparing semi-local reproduction of grade in swath plots.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>For open pit resources, a variable cutoff is applied on Cu grades depending on oxidation state (1% Cu in oxide, 0.7% Cu in transition material, and 0.5% in sulphide ores). These cutoff's were calculated based on application of a simple economic model (Cu price \$7000/t. mining cost of \$2/t, additional ore mining plus processing and administration costs of \$22/t and Cu recovery of 45% in oxide, 65% in transition and 90% in fresh).</li> <li>For underground resources, a minimum mining width of 4m and a cut off of 1.08%Cu equivalent was applied, where <math>CuEq = Cu + Ag * 0.008546</math>. This cutoff grade is derived from a more complex economic analysis incorporating taxation, transport smelting and refining charges.</li> </ul>
<b>Mining factors or</b>	<ul style="list-style-type: none"> <li>Open pit resources are reported within the current pit design. Open pit mining is underway and will be complete within two years.</li> </ul>

Criteria	Commentary
<b>assumptions</b>	<ul style="list-style-type: none"> <li>Underground resources are largely constrained to the limits of the interpreted high grade domain. A feasibility study has demonstrated economic viability of underground mining at Zeta, and it is planned to commence underground mining in the near future.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Cu recoveries applied in calculation of open pit cutoffs are derived from analysis of mill performance. Variable recovery is applied depending on the ratio of acid soluble copper (CuAS) to total copper (TCu).</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>No issues noted.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Bulk density has been estimated into the model from a database of measurements obtained using the Archimedean weight in air, weight in water method.</li> <li>Subsequent to commencement of open pit mining, a number of grab samples from the pit have been tested, which confirm earlier core measurements</li> <li>Bulk density estimates are regarded as adequate.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The estimates have been classified into Measured, Indicated and Inferred Resources according to the JORC 2012 code, taking into account data quality, data density, geological continuity, grade continuity and estimation confidence. Long section polygons were used to define zones of different classification.</li> <li>Measured Resources are largely restricted to the area of grade control drilling, where drill spacing is 25m along strike by 10m vertically. Measured Resource has been cautiously extended beyond the limits of grade control drilling where resource drilling is present at 50m (strike) by 25m RL.</li> <li>Indicated Resources are defined where drilling is at 100m centres along strike, by 50-70m or better in RL.</li> <li>Inferred Resources are defined around the margins of Indicated resource.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>This estimate has been internally peer reviewed.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>The resource model has been compared against mill reconciled mine production. The mine reconciliation processes was changed significantly in October 2013, and the figures from prior to that date are not directly comparable with those after.</li> <li>When averaged over the 10 month period from October 2013 to July 2014, the tonnage and grade predicted by the 2014 resource model is consistent with the tonnage and grade delivered to the mill after mining actualization. After detailed examination, QG is confident that the resource model is a reliable predictor of the in-situ tonnage and grade of mineralisation.</li> <li>Achievement of predictions from reserves estimates will require ongoing attention on mining control.</li> </ul>



## 5.16 Section 4 Estimation and Reporting of Mineral Reserves

Criteria	JORC Code explanation	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li><i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></li> <li><i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resources for the Zeta Underground were reported by QG as at 30th June 2014. The Resource Statement is signed by Mr Mike Stewart who is a full time employee of QG, a member of the AusIMM and the Australian Institute of Geoscientists with sufficient relevant experience to qualify as a Competent Person.</li> <li>The Mineral Resources are inclusive of these Ore Reserves.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li><i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>A site visit was undertaken at the Zeta Mine by Mr Joe McDiarmid on the 8<sup>th</sup> of May 2014.</li> </ul>
<b>Study status</b>	<ul style="list-style-type: none"> <li><i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li><i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></li> </ul>	<ul style="list-style-type: none"> <li>Zeta is currently an operating open pit mine. The Mineral Resources have been converted to Ore Reserves by means of Life of Mine development and stoping plan together with economic budget preparation. Standard modifying factors as stated below were used for underground mining.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li><i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>A calculated in situ copper equivalence cut-off grade of 1.08% was used after applying Mining Factors for underground Ore Reserves.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li><i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li><i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i></li> <li><i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></li> <li><i>The mining dilution factors used.</i></li> <li><i>The mining recovery factors used.</i></li> </ul>	<ul style="list-style-type: none"> <li>Optimisation of appropriate factors such as cut-off grade, loss, dilution and design parameters were used to convert the Mineral Resource to an Ore Reserve</li> <li>The chosen method of mining is by sub-level cave stoping.</li> <li>The geotechnical parameters used are per the updated 2012 DFS</li> <li>Development has a 100% recovery and 10% dilution applied.</li> <li>Stoping has 90% recovery and 15% Dilution applied.</li> <li>A minimum mining width of 4m is adopted.</li> <li>Inferred Mineral Resources may be included within stope shapes but the assigned grade to this material is zero and hence assumed to be waste rock.</li> <li>Zeta is an existing open pit operation therefore the underground operation will utilise the surface infrastructure in place.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	<ul style="list-style-type: none"> <li>The Boseto processing plant is targeting 3.2Mtpa throughput, although it has not yet achieved that level. The process path is: <ul style="list-style-type: none"> <li>The comminution circuit comprises three stage crushing and ball milling. ROM material is trucked from the mine into either ROM stockpiles and then rehandled by front-end-loader into a bin, or tipped directly into the bin. Ore gravitates via an apron feeder into a jaw crusher. Crushing incorporates a three stage crushing plant with a crushing capacity of 500dtp to product size (P80) of 15mm;</li> <li>Flotation includes a flash flotation cell and separate sulphide and oxide flotation circuits with copper sulphide rougher flotation, regrinding of the unit cell concentrate in a regrind circuit to a product size (P80) size of 38µm. This is followed by two stages of sulphide cleaning and then oxide copper flotation of the sulphide rougher tails followed by three stages of cleaning of the oxide rougher concentrates;</li> <li>Concentrate handling includes dewatering of both the oxide and sulphide copper concentrates via a concentrate thickening circuit and filtration of the concentrate via a single vertical plate filter; and</li> <li>Disposal includes tailings thickening in a 20m diameter thickener with disposal of the underflow to the Tailings Storage Facility (TSF).</li> </ul> </li> <li>The process metallurgical recovery for copper is dependent on the S:Cu ratio and calculated for each block using the following formula "<math>\text{MIN}((99.705 - (105.31 * (\text{ASCu\%/Cu\%})), 92) / 100)</math>"</li> <li>The process metallurgical recovery for silver is fixed by material type: <ul style="list-style-type: none"> <li>oxide = 50%</li> <li>transitional = 70%</li> <li>sulphide = 75%</li> </ul> </li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of</li> </ul>	<ul style="list-style-type: none"> <li>DML has appropriate and approved waste dump designs in place and in operation, of sufficient size to store the expected quantities of mine waste rock associated with the Zeta Underground Ore Reserve.</li> <li>Likewise, Boseto has sufficient capacity in its purpose designed and</li> </ul>



Criteria	JORC Code explanation	Commentary
	<i>approvals for process residue storage and waste dumps should be reported.</i>	approved tailings storage facility to meet the requirements generated from mining and processing the Zeta Ore Reserve.
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Boseto operation has the required infrastructure in place to process the Zeta Underground Ore Reserve. Additional infrastructure will be required to establish the underground operations as set out in the Zeta Underground DFS.</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of deleterious elements.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.</i></li> <li><i>The source of exchange rates used in the study.</i></li> <li><i>Derivation of transportation charges.</i></li> <li><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li><i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<ul style="list-style-type: none"> <li>The underground capital costs have been included in the contractor costing.</li> <li>The operational costs are based on historical processing and administration costs and underground contractor estimates.</li> <li>No allowances for deleterious elements have been made.</li> <li>A Copper price of USD7,000/tonne was provided by DML and validated by internal RPM data bases.</li> <li>Transport charges as per the current operation have been allowed to cart the ore from the mine to the processing plant. Processing costs etc. have been based on ongoing actual costs.</li> <li>The main mining costs used are: <ul style="list-style-type: none"> <li>stope production cost US\$26/tonne ore (actual proposed costs have been built up from mining contractor quotes).</li> <li>Ore development costs are US\$4,165/m</li> <li>Capital development costs are US\$3,654/m</li> <li>The processing costs are US\$6.00/t ore</li> <li>Administration costs are US\$0.64/t ore</li> </ul> </li> <li>The royalties used include: <ul style="list-style-type: none"> <li>3% of Copper net value</li> <li>5% of Silver net value</li> </ul> </li> </ul>
<b>Revenue factors</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<ul style="list-style-type: none"> <li>The following table outlines the assumptions made in relation to revenue factors:</li> </ul>
<b>Market assessment</b>	<ul style="list-style-type: none"> <li><i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li><i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li><i>Price and volume forecasts and the basis for these forecasts.</i></li> </ul>	<ul style="list-style-type: none"> <li>DML has an arrangement for sale of the Boseto concentrate to metal trader Transamine that has an initial term expiring in early 2015, automatically renewed for successive 12 month periods thereafter.</li> <li>It was considered that copper and silver will be marketable for beyond the processing life.</li> <li>The capacity of the Zeta Underground is 1.8Mtpa.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<ul style="list-style-type: none"> <li>The commodity is not an industrial metal.</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	<ul style="list-style-type: none"> <li>DML supplied an annual discount rate of 9.5% to be used in financial analysis, which RPM considered appropriate for an operating mine in Botswana.</li> <li>The base case results in a positive economic outcome as assessed by a NPV calculation (@9.5% DCF).</li> <li>A +/-10% copper equivalent cut-off sensitivity has been run, each using a high level schedule and financial model resulting in an NPV change of +/-10% respectively.</li> <li>The NPV is most sensitive to the copper price. A discounted NPV changes by +/- 25% with a +/-5% change in metal price respectively.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>The status of agreements with key stakeholders and matters leading to social licence to operate.</li> </ul>	<ul style="list-style-type: none"> <li>DML have established relevant agreements with local stakeholders.</li> <li>The mine plan for the operation of the zeta underground includes the use of skilled expatriate workers and locally sourced skilled workers.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	<ul style="list-style-type: none"> <li>DML has received the relevant Mining License from the government of the Republic of Botswana (Mining License No. 2010/99L), which is valid until 19 December 2025. This license covers the area incorporating Zeta Open Pit and Underground Mines, and associated waste dumps and haul roads, the plant and tailing facility, and offices.</li> <li>DML has contracts in place for the provision of some materials and supplies for the operation.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	<ul style="list-style-type: none"> <li>The Ore Reserve is classified as Proved and Probable in accordance with the JORC Code, corresponding to the Mineral Resource classifications of Measured and Indicated and taking into account other factors.</li> <li>The deposit's geological model is well constrained. The Ore Reserve classification is considered appropriate given the nature of the deposit, the moderate grade variability, drilling density, structural complexity and mining history.</li> <li>No Inferred Mineral Resources were included in the Ore Reserve estimate.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>RPM has completed an internal review of the Ore Reserve estimate.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li><i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></li> <li><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li><i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li> <li><i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>RPM has used mine design practices and estimates based on the Zeta underground DFS with additional information provided by DML in relation to updated operating costs. The accuracy of many of these estimates is therefore in line with the DFS, i.e. +/-15%</li> <li>The Ore Reserve report is a local assessment of the underground potential for the Zeta Underground Mine based on the assumption that it will be mined.</li> <li>The accuracy and confidence limits are based on the current designs and cut-off grade analysis employed in the economic evaluation. Material changes to the economic assumptions including the operating assumptions and the revenue factors may materially impact the accuracy of the estimate.</li> <li>The Ore Reserve has utilised all parameters provided by site as made available.</li> </ul>

## Appendix 2

### Zeta Underground Mine

#### Mine Design Plans

