

## PRESS RELEASE

10 DECEMBER 2014

# CENTRAL MURCHISON GOLD PROJECT – MINERAL RESOURCE AND INITIAL ORE RESERVE ESTIMATES

Metals X Limited (Metals X) is pleased to advise that it has completed its Mineral Resource and initial Ore Reserve estimates for the expanded Central Murchison Gold Project. The expanded project now considers the newly acquired projects that came with the acquisition of the Meekatharra Gold Operations from GMK Exploration Pty Ltd, a subsidiary of Reed Resources Limited.

***The Consolidated Total Mineral Resource estimate is 128 million tonnes at 2.1 g/t gold containing 8.5 million ounces.***

***The initial Consolidated Ore Reserves estimate is 21.2 million tonnes at 3.0 g/t gold containing a recoverable 2.02 million ounces.***

Metals X continues to work around the strategic scheduling of the mining reserves into its development strategy for the region and the Company expects to be able to update the market on its works schedule and plans for a re-commencement of gold production from the region in the New Year.

Metals X CEO, Peter Cook said *“This is an excellent start for the Company in its plans to re-start gold production from the expanded Central Murchison Gold Project. The initial Ore Reserve is a great foundation for a re-start and it is yet to include a full economic re-evaluation of all the potential ore production options from the 72 separate ore sources available. The focus of Metals X to be re-establishing longer term and high-grade sustainable production from the proved and prolific past producing underground mines in the region. The capital plant and infrastructure is in place and we are internally funded for the re-development. We continue to target a mid-2015 re-start of the operations.”*

## ENQUIRIES

### **Peter Cook**

CEO & Executive Director

### **Warren Hallam**

Executive Director

### **Rod Corps**

Manager - Investor Relations



**METALS X LIMITED**

Metals X Limited is a diversified group exploring and developing minerals and metals in Australia. It is Australia's largest tin producer, a top 10 gold producer and holds a pipeline of assets from exploration to development including the world class Wingellina Nickel Project.

## CORPORATE DIRECTORY

ASX Code: **MLX**

OTCQX Code: **MTXXY**

Level 3, 18-32 Parliament Place  
West Perth WA 6005  
Australia

PO Box 1959  
West Perth WA 6872  
Australia

t: +61 8 9220 5700

f: +61 8 9220 5757

reception@metalsx.com.au

www.metalsx.com.au

**CENTRAL MURCHISON GOLD PROJECT**  
**MINERAL RESOURCE ESTIMATE – DECEMBER 2014**

Ore Body	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)
<b>OPEN PIT</b>												
Paddy's Flat	0	0	0	21.5	1.2	801.1	11.3	1.1	395.3	32.8	1.1	1,196.4
Yaloginda	0	0	0	8.8	1.5	435.0	9.6	1.5	452.1	18.4	1.5	887.1
Reedy	0	0	0	0.6	2.7	53.4	2.2	1.8	131.7	2.9	2.0	185.1
Day Dawn	0.1	1.4	4.9	3.4	1.8	192.9	2.5	1.5	118.0	6.0	1.6	315.8
Cuddingwarra	0	0	0	3.0	2.2	205.2	4.0	2.7	350.8	7.0	2.5	556.0
Big Bell	0	0	0	8.2	1.7	458.9	3.4	1.6	173.7	11.7	1.7	632.6
<b>SUB TOTAL</b>	<b>0.1</b>	<b>1.4</b>	<b>4.9</b>	<b>45.5</b>	<b>1.5</b>	<b>2,146.5</b>	<b>33.1</b>	<b>1.5</b>	<b>1,621.6</b>	<b>78.8</b>	<b>1.5</b>	<b>3,773.0</b>
<b>UNDERGROUND</b>												
Paddy's Flat	0	0	0	5.3	3.4	571.2	2.6	3.8	314.8	7.9	3.5	886.0
Yaloginda	0	0	0	0	0	0	0	0	0	0	0	0
Reedy	0	0	0	1.0	3.6	114.4	2.3	2.8	206.0	3.3	3.0	320.4
Day Dawn	0	0	0	1.9	9.5	565.0	0.1	5.4	15.8	1.9	9.3	580.8
Cuddingwarra	0	0	0	0	0	0	0	0	0	0	0	0
Big Bell	0	0	0	20.5	2.8	1,854.3	11.5	2.7	982.0	31.9	2.8	2,836.3
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28.6</b>	<b>3.4</b>	<b>3,104.8</b>	<b>16.5</b>	<b>2.9</b>	<b>1,518.6</b>	<b>45.1</b>	<b>3.2</b>	<b>4,623.5</b>
<b>OTHER</b>												
Stockpiles	0	0	0	0.6	0.7	14.0	0	0	0	0.6	0.7	14.0
Tails	0	0	0	3.7	0.7	84.5	0	0	0	3.7	0.7	84.5
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4.4</b>	<b>0.7</b>	<b>98.4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4.4</b>	<b>0.7</b>	<b>98.5</b>
<b>GRAND TOTAL</b>	<b>0.1</b>	<b>1.4</b>	<b>4.9</b>	<b>78.5</b>	<b>2.1</b>	<b>5,349.7</b>	<b>49.6</b>	<b>2.0</b>	<b>3,140.3</b>	<b>128.0</b>	<b>2.1</b>	<b>8,495.0</b>

**CENTRAL MURCHISON GOLD PROJECT**  
**ORE RESERVE ESTIMATE – DECEMBER 2014**

Ore Body	Proven			Probable			Total		
	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)
<b>OPEN PIT</b>									
Paddy's Flat	0	0	0	0	0	0	0	0	0
Yaloginda	0	0	0	0.3	2.6	27.5	0.3	2.6	27.5
Reedy	0	0	0	0.4	2.5	32.0	0.4	2.5	32.0
Day Dawn	0	0	0	1.0	1.9	58.1	1.0	1.9	58.1
Cuddingwarra	0	0	0	0.1	2.7	10.9	0.1	2.7	10.9
Big Bell	0	0	0	1.8	2.0	119.4	1.8	2.0	119.4
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.6</b>	<b>2.1</b>	<b>247.9</b>	<b>3.6</b>	<b>2.1</b>	<b>247.9</b>
<b>UNDERGROUND</b>									
Paddy's Flat	0	0	0	3.4	4.0	435.5	3.5	4.2	435.5
Yaloginda	0	0	0	0	0	0	0	0	0
Reedy	0	0	0	0.5	3.7	59.5	0.5	3.7	59.5
Day Dawn	0	0	0	2.0	7.9	508.4	2.0	7.9	508.4
Cuddingwarra	0	0	0	0	0	0	0	0	0
Big Bell	0	0	0	8.0	2.7	682.5	8.0	2.7	682.5
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13.9</b>	<b>3.8</b>	<b>1,685.9</b>	<b>13.9</b>	<b>3.8</b>	<b>1,685.9</b>
<b>OTHER STOCKS</b>									
Stockpiles	0	0	0	0.3	0.9	8.2	0.3	0.9	8.2
Old BB Tails	0	0	0	3.4	0.7	76.4	3.4	0.7	76.4
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.7</b>	<b>0.7</b>	<b>84.5</b>	<b>3.7</b>	<b>0.7</b>	<b>84.5</b>
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21.2</b>	<b>3.0</b>	<b>2,018.3</b>	<b>21.2</b>	<b>3.0</b>	<b>2,018.3</b>

## **COMPETENT PERSONS STATEMENTS**

The information in this report that relates to Mineral Resources compiled by Metals X technical employees under the supervision and review of Mr. Jake Russell B.Sc. (Hons), who is a member of the Australian Institute of Geoscientists. Mr Russell is a full-time employee of the company, and has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activities 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". Mr Russell consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this Ore Reserve estimate report is compiled by Metals X technical employees under the supervision and review of Mr Michael Poepjes BEng (Mining Engineering), MSc (Min. Econ) M.AusIMM. Mr Poepjes is a full-time employee of the company. Mr Poepjes has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activities 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". Mr Poepjes consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

## THE CENTRAL MURCHISON GOLD PROJECT

The [“CMGP”] is made up of six major project areas, which have all been historic mining centres of the greater Murchison Goldfield:

1. the Big Bell Mining Centre, 30km west of Cue township;
2. the Cuddingwarra Mining Centre, 15km west of the town of Cue;
3. the Day Dawn Mining Centre, 5km south of the town of Cue;
4. the Reedy’s Mining Centre, 50km northeast of the town of Cue;
5. the Paddy’s Flat Mining Centre on the eastern edge of the town of Meekatharra; and
6. the Yaloginda Mining Centre approximately 10km south of the town of Meekatharra.

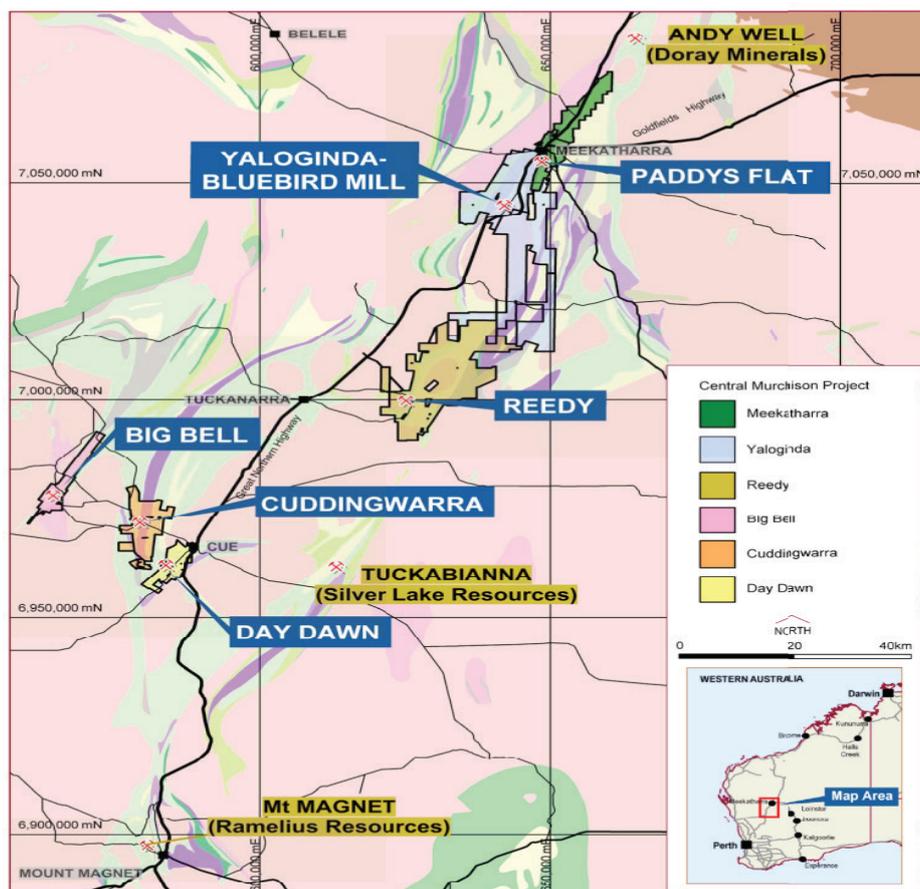


Figure 1: Location of the Central Murchison Gold Project

Metals X through its wholly owned subsidiary, Big Bell Gold Operations Pty Ltd [“BBGO”] holds significant contiguous mining tenure over these mining centres.

The CMGP is well serviced with infrastructure with the major Great Northern Highway transecting the region and substantial gravel roads established to all mining areas. A recently refurbished and operated 2.0 million tonnes per annum CIP plant (“The Bluebird Mill”) is located at Yaloginda along with a 200-person accommodation village. At Cue a 50-person accommodation village is owned by BBGO. Regional towns of Cue and Meekatharra offer services and some residential workforce options.

## **CMGP REGIONAL GEOLOGY**

The Murchison Province is the western-most of three granite-greenstone provinces, which with the Western Gneiss Terrane, comprise the Archaean Yilgarn Craton. Gold mineralisation is almost entirely epigenetic and is intimately associated with major faults and shear zones through the greenstone belts of the area. The mineralisation is preferentially hosted by banded iron-formation, ultramafic, mafic rocks, felsic intrusives and sometimes volcano-clastic rocks.

In terms of past production, the Murchison Province is Western Australia’s second most important gold-mining region after the Eastern Goldfields. Metals X’s Central Murchison Project is comprised of 6 of the Murchison’s most prolific gold mining camps, responsible for aggregated past production of 10 million ounces of gold. Major opportunities still exist for further exploration and important new discoveries.

## **CMGP DEVELOPMENT OBJECTIVES**

The CMGP consists of 69 separate ore bodies which have been the subject of resource estimation. In addition a further three accumulations of stockpiles and historic tailings exist.

A key feature of the CMGP is the dominance of historic production by a handful of larger underground mines, most of which were mined and closed in the early 1900’s. In recent times, with the advent of CIP technology, lower cost processing and the recognition of supergene enhancement, the last 30 years of historic production has been dominated by open pit mining. In more recent times a second phase of open pit mine expansion has occurred in reaction to re-optimisations and higher gold prices.

The long-term objective of BBGO is to rebuild the region as a dominant and sustainable gold producer from underground mines, the likes of what have historically dominated the past production.

## **THE BIG BELL MINING CENTRE**

The Big Bell mining centre is located at the southern end of a narrow northeast-trending greenstone belt, (informally referred to as the Big Bell greenstone belt), which adjoins the larger Meekatharra - Mount Magnet Greenstone Belt. The belt has a strike length of 33km and a width of 1.5km at Big Bell, and is bounded to the east and west by granite intrusions. To the north of Big Bell, the Big Bell Greenstone Belt widens, whereas to the south the sequence thins to less than 200m (approximately 7km south of the mine).

The Big Bell greenstone belt is comprised of variably altered and intensely sheared, north-northeast-trending amphibolites and felsic schists. The muscovite and biotite-altered rocks hosting gold mineralisation at Big Bell are informally referred to as the Big Bell mine sequence. The greenstone belt can be divided into three domains separated by two major regional fault zones (Barnes, 1996). The eastern domain (mostly amphibolite), the central domain (quartzo-feldspathic and biotite schists which host the Big Bell Mine Sequence), and the western domain (dominated by amphibolite). The metamorphic grade within the greenstone belt is mid to upper amphibolite facies (Phillips, 1985).

The Mine Sequence includes biotite and quartzo-feldspathic schists (BISH and INSH), altered amphibolite (AMPH) and sheared porphyry dyke (PORP) within the central domain of the Big Bell greenstone belt. The main host for gold mineralisation at Big Bell is altered K-feldspar-rich (KPSH) and muscovite-rich (ALSH) quartzo-feldspathic schists. The sequence dips to the east, and its base is the tectonic contact with the amphibolite of the western domain, along the graphitic Footwall Shear Zone (G Barnes, 1999).

Along strike to the south of Big Bell, the lithological host of the mineralisation is variable, although still restricted to the altered biotite or quartzo-feldspathic schist. At the Little Bell and Big Bell South prospects, better developed gold mineralisation is found on the hangingwall (BISH) and to a lesser degree the footwall (KPSH) contacts of the mineralisation observed at Big Bell. Further south, the biotite (+ cordierite) schist (BISH) is the dominant host at the Shocker and 1,600N prospects with lower, more dispersed grade within the ALSH. The Fender prospect is the southernmost deposit and the entire mine sequence narrows significantly such that, although only approximately 13 metres wide, the mineralised lithologies includes ALSH, BISH and INSH. The Fender mineralisation is bound on the footwall by KPSH and hangingwall by garnet-rich schist (GASH).

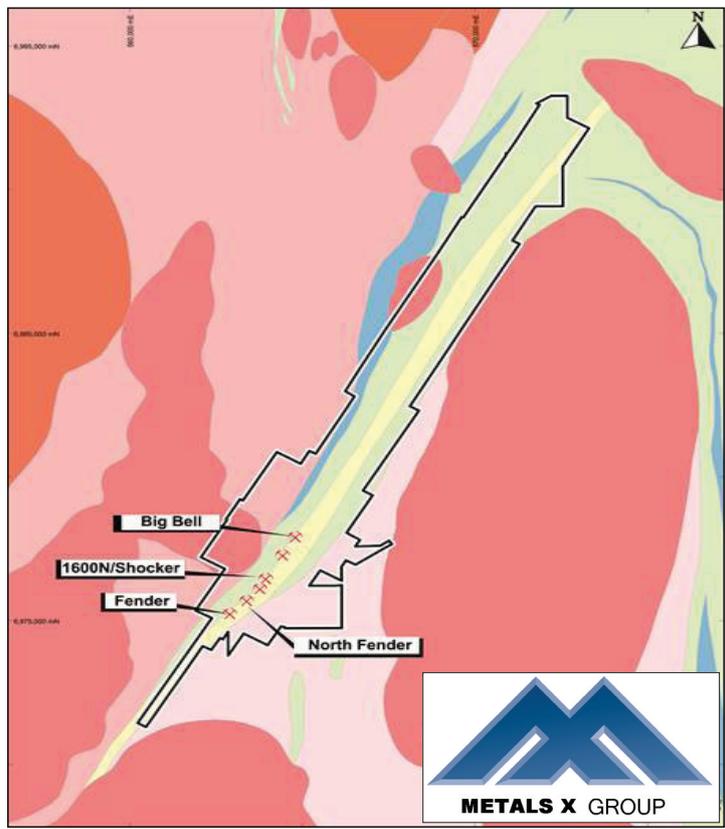


Figure 2: Schematic outline of Big Bell area geology showing the Big Bell mine sequence squeezed between the surrounding granite bodies.

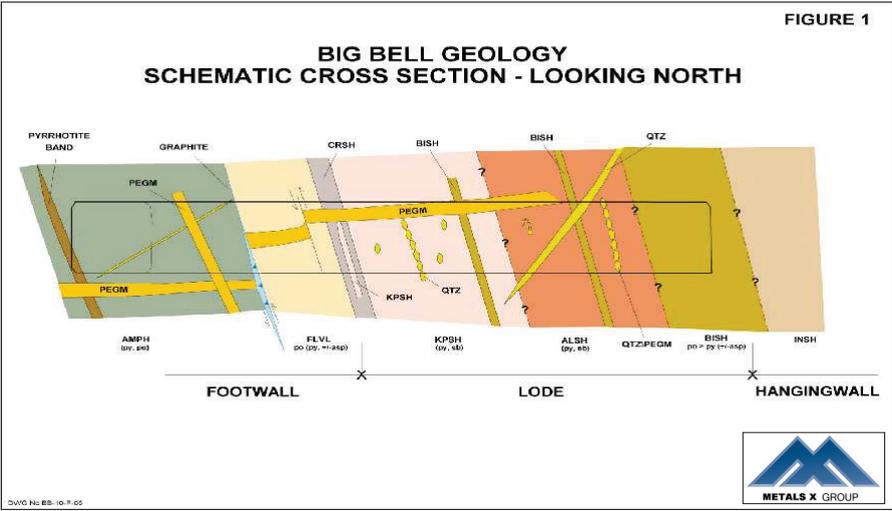


Figure 3: Schematic cross-section of Big Bell mine sequence geology.

In the Big Bell area, mineralisation outside the immediate Mine Sequence has been observed in the hangingwall amphibolite at Irishman - Mary Belle and the Footwall Amphibolites at Harris Find.

Approximately 30-40% of the belt outcrops and three areas of high relief (up to 30m) exist: one to the east of Big Bell mine; and the other two to the north of the mine. The remainder of the greenstone belt is concealed beneath granite-derived sheet-wash and alluvium of depths ranging from 5m to greater than 90m in Tertiary palaeo-drainage channels.

The majority of geological research and exploration at Big Bell has focused on the Mine Sequence lithologies as the most important exploration target. However, it has undoubtedly been the structural setting of the Mine Sequence that has prepared the lithologies to become favourable hosts for gold mineralisation. Some authors believed the mineralisation at Big Bell was localised in a dilational bend along a steep reverse shear zone, which is defined by the K-feldspar altered rock and associated muscovite shears. Barnes (1999) suggests that the presence of the “lode equivalent” horizons is not the only measure of gold prospectivity and that subtle crosscutting structures maybe an important control on gold distribution. Indeed the variety of lithological hosts south of Big Bell, where KPSH is barren of gold and associated trace elements, seems to support the theory that prevalence of cross-cutting structures is the most important component to mineralisation deposition.

The most obvious structural feature within the host rocks at Big Bell is the penetrative foliation. This foliation developed during syn-metamorphic ductile deformation which is uniformly accepted as pre-mineralisation. Other structures noted in the literature are the O10 to O20 (magnetic) striking shears which may influence the location of high grade mineralisation at Big Bell (Barnes, 1999). Regionally such structures can be observed as thin slivers of greenstone extending south into the granites. The southern extension of this feature would come close to intersecting the Big Bell Mine area. Similar structures are also interpreted at Fender.

Structures observed regionally influencing the distribution of mineralisation (for example at the Cuddingwarra and Golden Crown mines) could also be affecting the mineralisation within the Big Bell Belt. The intensity of the foliations at Big Bell and the subtle appearance of most cross-structures make their identification difficult (especially within drill core). Mineralisation potentially could be blind at surface, controlled by zones of dilation within the major structure(s) and located beneath subtle surface anomalies. More emphasis needs to be placed on defining structural controls regionally and relating that to what is seen at Big Bell. A criticism of the “duplex model” (Smith, 1998) is that it is a structural concept which placed much more emphasis on defining possible repetitions of the Mine Stratigraphy than targeting favourable structural settings.

While the Mine Sequence corridor is the paramount exploration target, the surrounding rock types (Western and Eastern Domains) are also very favourable hosts for gold mineralisation. Etheridge and Henley (1994) believed that mineralisation need not be confined to areas of amphibolite facies regional metamorphic grade, but could also occur in areas where the controlling shear zones cut greenschist facies rocks.

Five phases of alteration have been recognised at Big Bell (Barnes, 1996). These are:

1. Pre-metamorphic – mass loss and aluminous enrichment;
2. Prograde biotite, muscovite and calc-silicate alteration, along with barren sulphide mineralisation;
3. Retrograde muscovite, sericite and chlorite alteration;
4. K-feldspar and silica alteration, plus gold and sulphide mineralisation;
5. Incipient development of sillimanite and remobilisation of pyrite and pyrrhotite during contact metamorphism.

Mineralisation at Big Bell is hosted in the shear zone (Mine Sequence) and is associated with the post-peak metamorphic retrograde assemblages (Smith, 1998). Stibnite, native antimony and trace arsenopyrite are disseminated through the K-feldspar-rich lode schist. These are intergrown with pyrite and pyrrhotite, which are noted in most rocks of the Mine Sequence, and chalcopyrite (Barnes, 1996). Mineralisation outside the typical Big Bell host rocks (KPSH), for example 1,600N and Shocker, also display a very strong W-As-Sb geochemical halo (Barnes, 1999).

Most studies indicate gold exists in two forms, silicate and sulphide hosted. However, a metallurgical report by AMTEL suggests the principle gold mineral is native gold (88 wt% Au) and accounts for 73 to 79% of the gold in the mill feed. The silicate host to the gold includes quartz and microcline. Sulphide hosts include pyrite and pyrrhotite, as well as traces in aurostibite, ilmenite, rutile, stibnite and arsenopyrite.

## THE CUDDINGWARRA MINING CENTRE

The Cuddingwarra Mining Centre area is located approximately 10km west-northwest of Cue, Western Australia and covers an area of approximately 140km<sup>2</sup>. The project lies within the Meekatharra-Wyldgee Greenstone Belt, in the north-eastern Murchison Province of the Archaean Yilgarn Craton. The geology of the region is described in detail in Watkins and Hickman (1990) and Barnes (1996). A regional geological interpretation of the area is shown in Figure 4.

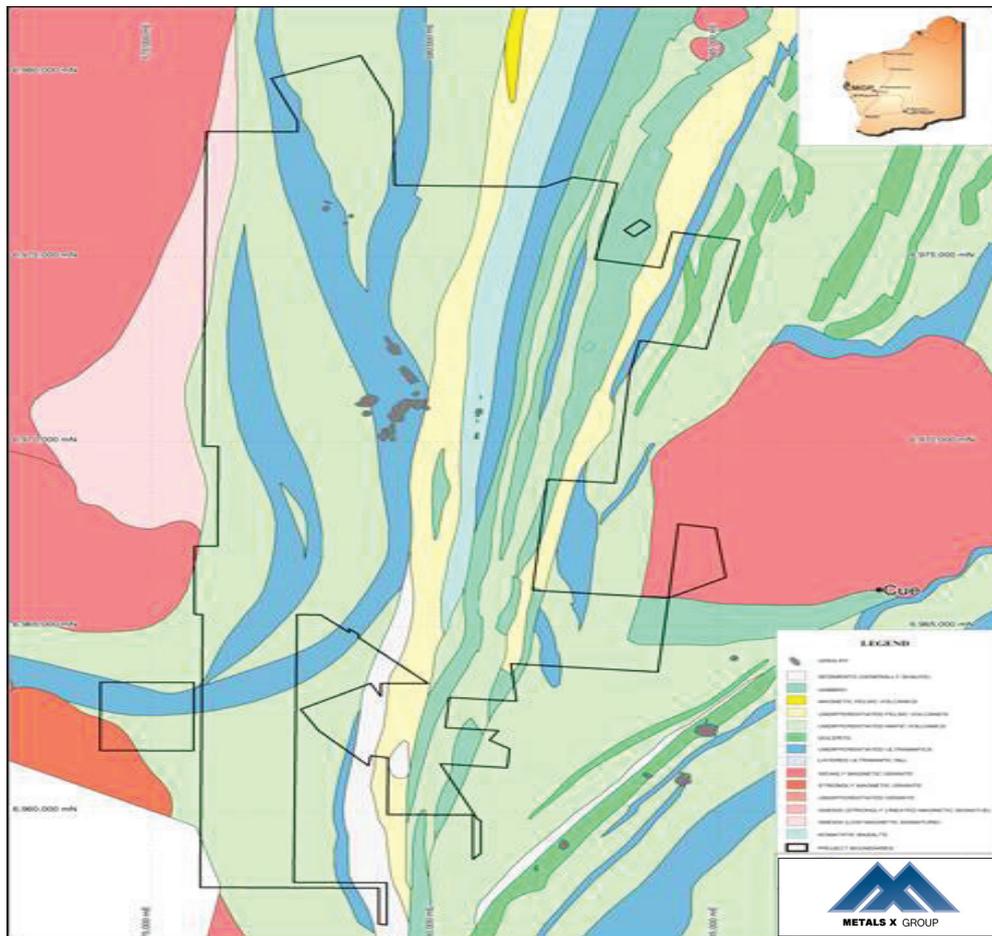


Figure 4: Cuddingwarra Project location plan and regional geology.

The greenstone belts of the Murchison Province trend north-northwest to north-northeast and consist of complexly deformed mafic and ultramafic rocks with minor felsic volcanics and interbedded sedimentary sequences. They are variably metamorphosed up to amphibolite facies and intruded by late stage granitoids. Gneissic and granitic batholiths and massifs separate individual greenstone belts. Contacts between granite and greenstone and between supra-crustal units are tectonised. As a result of this, the stratigraphic sequence is largely undetermined except in the broadest sense and the true thickness of the supracrustal sequence is unknown.

The Meekatharra-Wyldgee Greenstone Belt forms a major (F3) synform, trending north-northeast. The principal structures in the project area are north and north-northeast trending major faults and shear zones. A major shear zone (Cuddingwarra Shear Zone; blue line in Figure 5) is located along the eastern margin of the tenement group, which juxtaposes the greenstone sequences with the eastern sedimentary package.

The Cuddingwarra Mining Centre encloses three lithological sequences;

- A high-Mg basalt and basalt sequence in the west.
- Intercalated komatiites and high-Mg basalts, with minor tholeiitic basalts and dolerite units in the centre of the project area, which are punctuated by numerous early granodiorite intrusives and quartz-feldspar porphyries.
- A sequence of sediments and volcano-clastics in the east.

Numerous gold deposits occur within the Cuddingwarra Mining Centre, the majority of which are hosted within the central mafic-ultramafic ± felsic porphyry sequence (Figure 5). Earlier studies (Fairclough, 1999) used data integrated from multiple datasets including interpretation airborne magnetic images to enable the construction of a structural framework for gold mineralisation at Cuddingwarra. The minig area has a multifaceted structural history, which makes interpretation of geological features somewhat complex.

Structural analyses indicated the presence of at least three separate deformation episodes. Within this broad framework, mineralisation was shown to be spatially related to the D2 and D3 events, with gold tenor maximised where structures from both were coincident. In this early study the presence and influence of felsic porphyritic intrusives was considered to have been greatly overestimated and to be misleading.

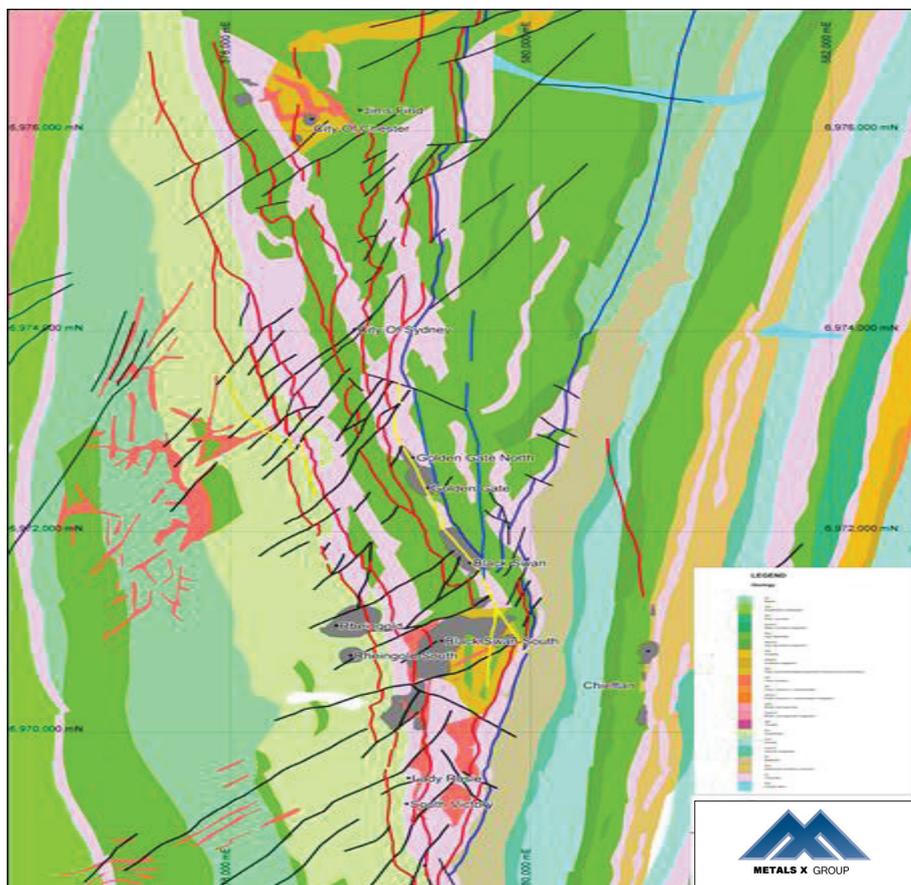


Figure 5: Structural interpretation of the Cuddingwarra Project area (SRK, 2000).

Mineralisation is controlled by competency contrasts across, and flexures along, layer-parallel D2 shear zones (red lines in Figure 5), and is maximised when transected by corridors of northeast striking D3 faults and fractures (black lines in Figure 5).

A significant degree of supergene remobilisation of gold has occurred within the deep and intense weathering profile, and is an important mechanism controlling economic concentrations of gold. Gold grades are quite variable above the base of oxidation, with horizontal near surface and base of oxidation dispersion zones common above primary mineralisation. It is likely that there has been localised remobilisation of gold into ferruginous clays and pisolitic laterite above the base of oxidation, with coarser gold being associated with quartz and much finer grained gold occurring within the clay-rich materials.

## THE DAY DAWN MINING CENTRE

The Day Dawn Mining Centre falls within the Gabanintha Formation of the Luke Creek Group as defined by Watkins and Hickman (1990). The Luke Creek Group comprises four formations listed from youngest to oldest as follows:

- Windaning Formation - A succession of abundant jaspilitic BIF and chert units interlayered with felsic volcanics, volcano-clastic, and volcanogenic rocks with minor basalts.
- Gabanintha Formation - A bimodal succession of mafic and ultramafic rocks, felsic volcanic and volcano-clastics, and sedimentary rocks.
- Golconda Formation - A succession of chert (quartz)-haematite BIF, interlayered with mafic and ultramafic extrusive and intrusive rocks.
- Murrouli Basalt; Mafic and ultramafic extrusive and intrusive rocks.

The area around Cue is intruded by gabbro, dolerite and late stage granite intrusives comprising the Cue Tonalite suite.

The main penetrative structural fabrics in the area are prominent D4 north to north-northeast trending shear zones and faults, and similarly oriented F3 fold axes. D3 and D4 structures probably formed as a result of one long-lived deformation resulting from east-west compression (Watkins and Hickman, 1990). The principal shear C-fabrics are orientated north-northeast, are sub-vertical, and contain visibly orientated stretching lineations. Kinematic indicators at local and regional scales vary considerably, often giving opposing sense of movement. Watkins and Hickman (1990) suggest an overall dextral strike slip vector for the Mount Magnet to Meekatharra Shear Zone.

A regional geological interpretation of the area is shown in Figure 6.

The Day Dawn project tenements cover a section of the Meekatharra-Wyldgee Greenstone Belt extending approximately 35km southwest from Cue. The strike of this belt changes, from north-northeast to north, just to the south of Mount Fingall (approximately 13km southwest of Cue), due to drag on the Cuddingwarra Shear Zone (CSZ).

The lithological units of the greenstone belt within the project area are correlated with the Gabanintha Formation. The 3 km thick sequence consists of predominantly extrusive basic volcanics and their intrusive counterparts, which may be divided into three broad groups:

- Hangingwall Basalts (HWB).
- Great Fingall Dolerite (GFD).
- Footwall Basalts (FWB).

The GFD is a large (up to 600m thick), differentiated tholeiitic sill that strikes north-northeast and dips 60-70° (west-northwest). It extends over a strike length of at least 16km, from Cue in the north (where it is terminated against the Cue Gabbro and a post-folding granodiorite) to the Cuddingwarra Shear Zone in the vicinity of Lake Austin in the south.

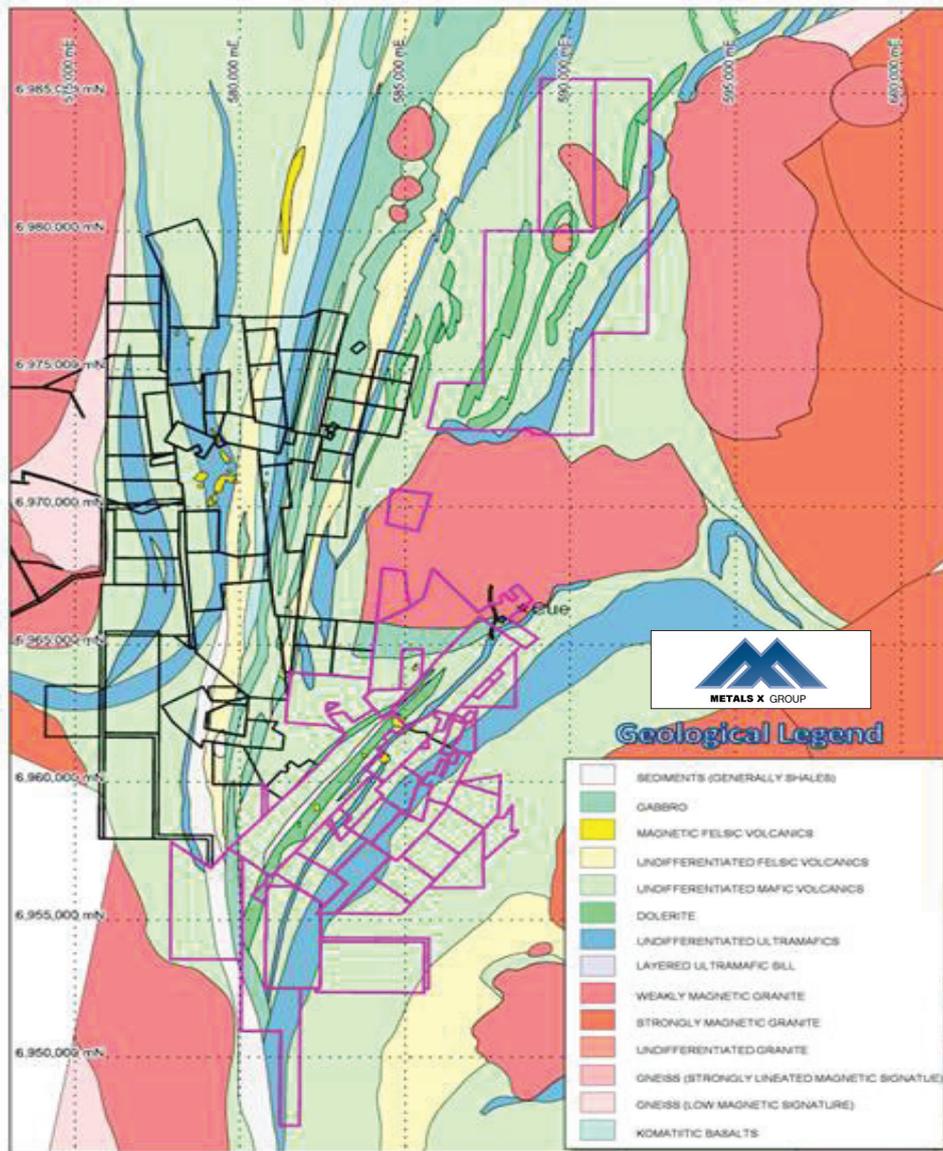


Figure 6: Interpreted geology of the Day Dawn (and Cuddingwarra) area.

Because of its significant role as a major lithological control on gold mineralisation, the GFD has been well delineated and studied, both on surface and in underground workings. Macroscopically it can be subdivided into five major units (Hicks, 1990, Pawlitschek, 1993), which are more or less recognisable throughout its length;

- AGF1 Upper chilled margin, approximately 20m thick, of fine-grained amphibole-plagioclase dolerite. At the hangingwall contact (with meta-sediments), it is schistose, heavily chloritised and carbonated.
- AGF2 A medium to coarse-grained, amphibole-plagioclase dolerite, approximately 60m thick, characterised by elongated dark green amphiboles. There is a transitional contact with AGF3A.
- AGF3 A thick (approximately 175-250m) coarse-grained, differentiated, Fe-rich, granophyric dolerite showing a marked foliation sub-parallel to the regional synformal axial plane. Calcite is a common accessory mineral. This thick central unit may be further divided into three sub-units;
  - ◇ AGF3A – A medium-grained granophyric dolerite. Marked by appearance of quartz, stubby black amphiboles and granophyric texture.
  - ◇ AGF3B – A medium to coarse-grained granophyric magnetic dolerite. Appearance of magnetite, and an increase in grain size, distinguishes it from AGF3A.
  - ◇ AGF3C – A fine to medium-grained, melanocratic, magnetic dolerite. There is no visible quartz. Amphibole and plagioclase make up the bulk of the rock, which has an equigranular texture.

- AGF4 A medium-grained sub-ophitic dolerite, approximately 175-200m thick, with only minor quartz. This unit becomes more leucocratic with an increase in plagioclase and decrease in magnetite towards the footwall. Equigranular texture.
- AGF5 Footwall ultramafic, approximately 50m thick, consisting of amphibole-chlorite-talc-magnetite schist. Distinguished by its high talc content, which gives the rock a soft and greasy texture, strong foliation and high magnetic signature.

Petrologically, the upper four units are quartz dolerites, with ubiquitous (5% free quartz (Hicks, 1990)). The upper three units are invariably granophyric, with much of unit AGF3 being granophyre with 5% free quartz. Unit AGF3 is the most brittle of all the five units and this characteristic is responsible for its role as the most favourable lithological host to gold mineralisation in the Greenstone Belt. Units AGF3B/C and AGF5 have strong magnetic signatures, which are particularly useful in mapping these units.

The Footwall Basalts (FWB) consists of a highly contorted succession of intercalated basalts, high-Mg basalts, dolerites and ultramafics, with felsic volcanics and metasedimentary lithological units (mainly siltstones) to the east. Although subordinate to the GFD, the Footwall Basalts host significant gold mineralisation, such as the 100koz deposit at Try Again.

The Hanging-wall Basalts (HWB) consist of a monotonous succession of basalts, pillow lavas, amygdaloidal basalts, agglomerate and graphitic interflow sediments well exposed as a line of low hills to the west of the Great Fingall Dolerite. A number of dolerite dykes and sills, two of which have been mapped, have intruded the Hanging-wall Basalts. The base of this group, in contact with the hanging-wall of the GFD, is marked by a distinct shale horizon that displays strong evidence of faulting and shearing.

A suite of younger dolerite dykes, up to 30m thick, occur in the GFD (Hicks, 1990). These dykes are fine-grained with chilled margins. They pre-date, but are oriented sub-parallel to, the major quartz reefs (strike north-northwest to north, dip steeply west).



Figure 7: Interpreted local geology of the Day Dawn area.

## THE REEDY MINING CENTRE

The Reedy's Mining Centre occurs west of the Mount Magnet Shear Zone (known locally as the Turn of the Tide Shear Zone), with the Culculli granitoid complex between. The greenstone belt is composed of volcano-sedimentary sequences. Gold is structurally controlled by sheared contacts of dolerite, basalt, ultramafic schist, quartz-feldspar porphyry and shale.

Deformation and mineralisation occur within a zoned alteration envelope characterized by biotite, carbonate, albite, and silica replacement and sulfidation of wall rocks.

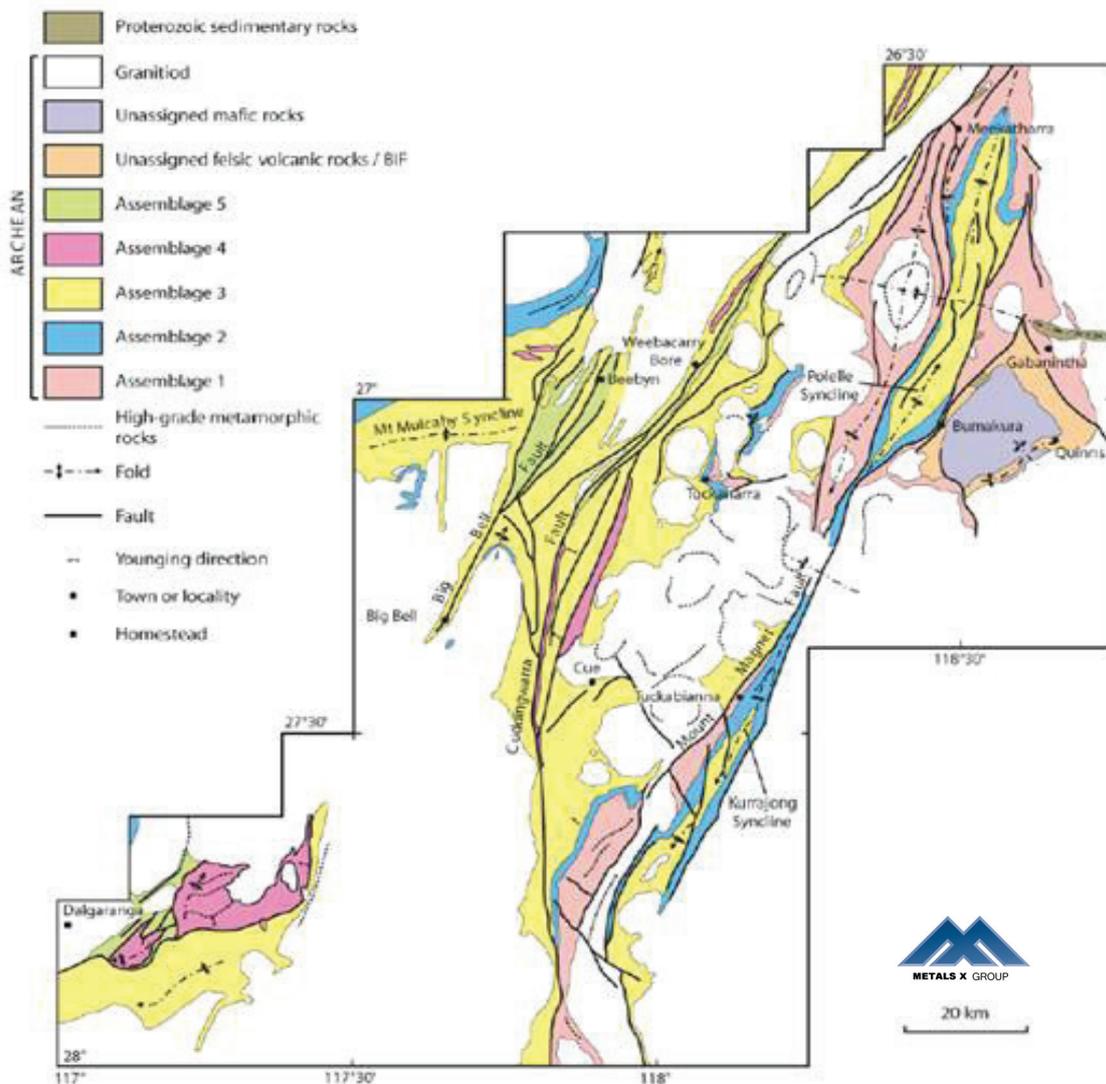


Figure 8: Simplified geology of the Murchison goldfields showing greenstone belts, major structures and lithological assemblages. Reedy's area highlighted in red.

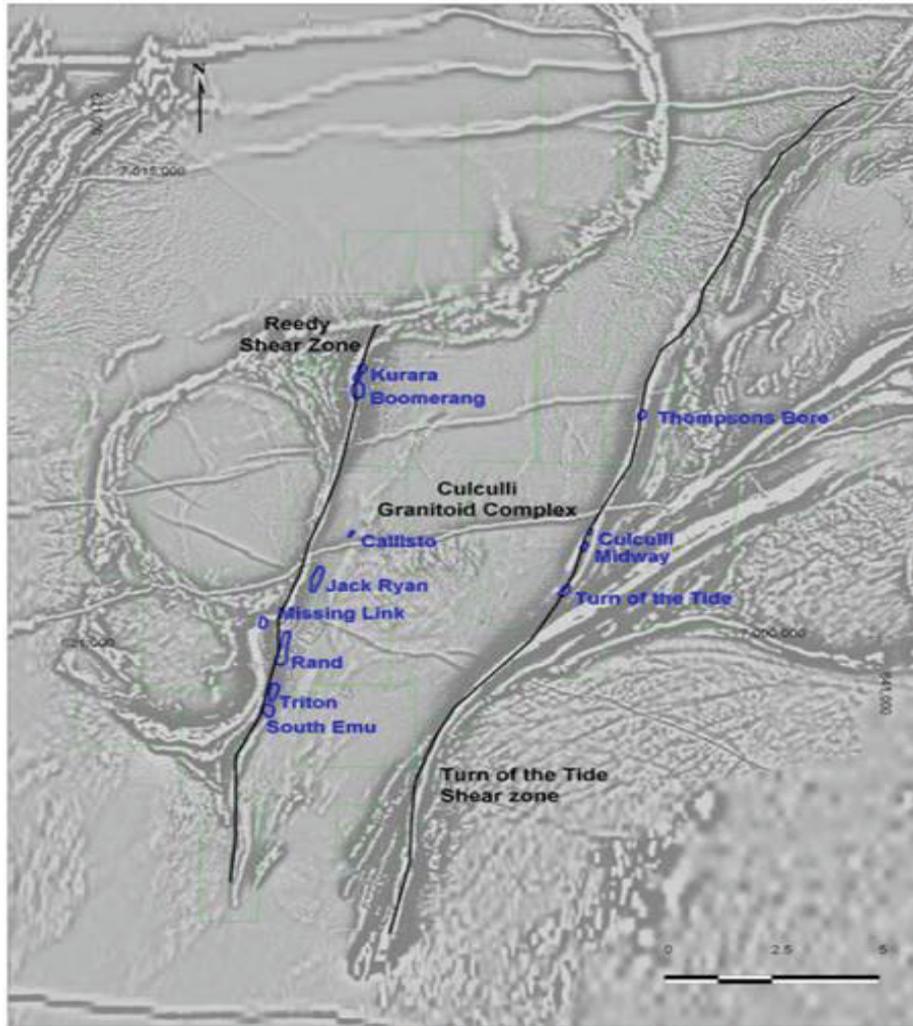


Figure 9: 1st vertical derivative magnetics showing Reedy's gold deposits (west) and Turn Of The Tide deposits (east).

## THE PADDY'S FLAT MINING CENTRE

The mines of the Paddy's Flat Mining Centre are located within the Yaloginda Formation of the Norie Group. Although the Yaloginda Formation is described as a sequence of volcano-clastic sediments and inter-bedded BIF units that have subsequently been intruded by voluminous mafic to ultramafic sills, the sequence evident at Paddy's Flat is a simple sediment – mafic succession, ultramafic succession and an intermediate volcanic succession (Figure 10).

The mafic volcanic – sedimentary succession is present in the western parts of Paddy's Flat and consists of tholeiitic basalt flows with thin bands of interflow sediment. A thick (>50m) package of volcano-clastic sediment and banded iron-formation (BIF) is present near the top of the sequence. Tholeiitic basalt is variably deformed and contains abundant vesicles that are now filled with chlorite and chalcedony. Rare channel-like structures, possibly related to de-gassing of the lava and the presence of rare pillow structures suggest a submarine environment. Drill core shows that the basal contacts with sediments are often diffuse and suggest minor melting of the underlying sediment. In contrast, the upper contacts of flows are well defined and show sediment infilling of surface features. The volcano-clastic sediments are intermediate in composition and grain size ranges from fine ash to lapilli and graded bedding is evident in fresh exposures. The fine nature of the bedding laminations and the small scale graded bedding suggest deposition in a water column. The BIF varies from an iron carbonate +/- magnetite BIF, to a chert – magnetite BIF. Individual BIF units range from less than 2m to 40m in width and are generally strongly magnetic.

The ultramafic volcanic succession and schistose equivalents represent the dominant lithotype of the eastern part of Paddy's Flat. Undeformed ultramafics are mostly grey to dark blue massive aphyric high-Mg basalt. Rare relicts of pillows and spinifex texture can be seen in low strained domains. The ultramafic rocks display a wide range of strain from undeformed to highly schistose and the schists typically exhibit talc-chlorite +/- carbonate assemblages. In areas of moderate strain, this lithotype develops a brecciated texture with fragments of darker, less altered high-Mg basalt surrounded by quartz-chlorite- talc veins.

Within the eastern parts of the ultramafic sequence, cumulate textured peridotite is evident within some drill holes. The peridotite now consists of a talc-carbonate-serpentine-rutile rock with primary textures well preserved. It is believed that these peridotite pods reflect the basal parts of thick ultramafic lava flows.

The intermediate volcanic succession is located along the eastern margin of the Paddy's Flat area and consists of andesite and intermediate volcano-clastic. The intermediate volcanic succession is best exposed in the Macquarie pit in the north east of the Paddy's flat area where andesite and volcano-clastic rocks are present along the east wall of the pit. Andesitic volcanic rocks are also evident in outcrop immediately to the east of Paddy's Flat, and have been encountered in the upper parts of drill holes located along the eastern margin of Paddy's Flat.

Felsic porphyries (porphyritic micro-granite) are present along the length of the Paddy's Flat area, and are most prevalent within and along the western contact of the sheared ultramafic succession. The porphyries commonly contain quartz and plagioclase phenocrysts (altered to albite), with rare muscovite phenocrysts also present. The intrusives form dyke-like bodies that vary from 2 to 20m in thickness, and pinch and swell along strike. In some areas, the porphyries pinch out for several to tens of meters. The 3D geometry of the porphyry bodies is complicated by the pinch and swell, but the host structure is somewhat consistent in orientation and geometry. In the northern part of Paddy's Flat, the quartz – plagioclase porphyry appears to be un-mineralised. Within the Halcyon open pit, a plagioclase – rich porphyry hosts mineralisation.

The structure of the Paddy's Flat mining area is primarily controlled by a significant structural corridor referred to as the Paddy's Flat Shear Zone. At the local scale, the Paddy's Flat Shear Zone is resolved into a number of sub-parallel ductile shear zones with associated brittle-ductile faulting. The central part of the shear system has developed on, or close to the boundary between the Mafic Volcanic succession and the ultramafic succession and has been intruded by a line of semi-continuous felsic porphyry dykes.

At least two subsidiary shear zones are developed immediately to the east of the central shear zone. Folding of the sequence has occurred prior to, or early in the development of, the Paddy's Flat Shear Zone, and numerous brittle faults are developed late in the formation of the shear zone. Folding of the stratigraphy at Paddy's Flat is best preserved within the sediments of the Mafic Volcanic succession. The folds show an open to tight rounded geometry within the banded iron-formation, and vary from rounded to chevron within the volcano-clastic sediments. Fold axes plunge moderately toward the SSE, with variability in plunge related to non- cylindrical fold development. An axial planar foliation is well developed throughout the mafic and ultramafic rocks at Paddy's Flat, with lesser development of the foliation in the sediments. The orientation and style of folding observed locally at Paddy's Flat is consistent with the regional Polelle Syncline, located to the north-east. The largest fold structures in the Paddy's Flat area are evident at the Grants pit and at the Prohibition pit. At Grants, a sequence of BIF is evident in the form of a large scale fold closure that has undergone extensive ductile deformation. At Prohibition, a large parasitic fold closure is evident in the southwest corner of the pit. Other large-scale fold closures are also evident on the aeromagnetic images of the area. Within the ultramafic sequence there is little evidence of folding, however a strong axial planar foliation is developed.

The central Paddy's Flat shear zone is host to the majority of high-grade gold mineralisation at Paddy's Flat and is likely the controlling structure for mineralisation at a regional scale. The shear zone displays a complex array of ductile and brittle-ductile structures that both focus and offset mineralisation indicating a long-lived movement history. The porphyry emplaced along the shear zone, and extensive alteration related to fluid migration along the shear, have been instrumental in developing a rheological contrast across the shear zone that has resulted in a change from ductile deformation to brittle deformation. The margins of the porphyry have also channelled early gold bearing fluids that have formed lodes along one or both contacts of the porphyry.

The mineralisation at Paddy's Flat can be classified into three groups which, in part, relate to the host Lithology and style of veining. The three styles of mineralisation can be summarised as:

- Sulphide replacement BIF hosted gold.
- Quartz vein hosted shear-related gold.
- Quartz-carbonate-sulphide stockwork vein and alteration related gold.

The three styles of mineralisation as listed above represent a general progression from west to east across the Paddy's Flat area

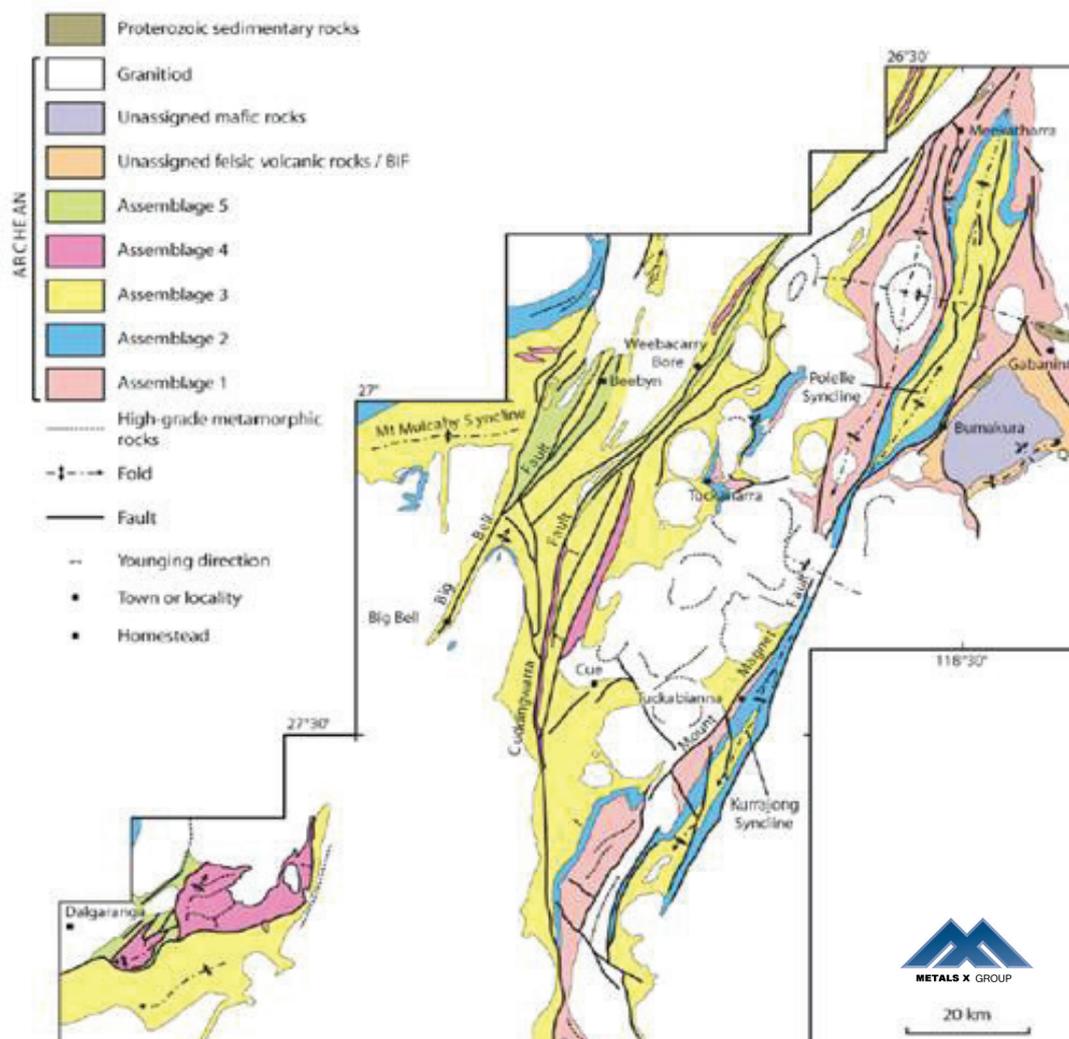


Figure 10: Simplified geology of the Murchison goldfields showing greenstone belts, major structures and lithological assemblages. Paddy's area highlighted in red.

### SULPHIDE REPLACEMENT BIF HOSTED GOLD

The Prohibition ore body is the best developed example of the BIF hosted gold deposits in the Meekatharra area. Mineralisation is present at the intersection of westerly dipping reverse faults of the Prohibition Fault set and the BIF unit. Apart from the Prohibition and Red Spider faults, a further 9 parallel faults and also known to be mineralised. The mineralisation plunges to the SSE along the line of intersection and is up to 20m wide adjacent to the Prohibition Fault. The mineralisation is characterized by sulphidation of the wall rocks and quartz-carbonate-sulphide±chlorite breccias veins. Pyrite and Arsenopyrite are the common sulphide species and are directly associated with fine grained gold as inclusions and at the boundary of the sulphides. Small-scale samples suggest that arsenopyrite forms within the veins or at the margins of the veins, whilst the pyrite is present within the veins and also replaces iron-rich minerals along the bedding adjacent to veins. The best mineralisation appears to occur in areas where the dominant iron-rich mineral is siderite, and mineralisation decreases in grade and intensity in areas where magnetite becomes dominant.

## **QUARTZ VEIN HOSTED SHEAR RELATED GOLD**

The quartz vein hosted shear related style of mineralisation at Paddy's Flat accounts for more than 1Moz of historic production from the area. The Fenian and Ingliston Consols Extended underground mines were developed to a depth of more than 400m by the early 1920's due to the high grade ore available from this style of mineralisation. The deposits of this type contain a mixture of high-grade fault related narrow-vein mineralisation (Spur Veins) at an angle to the shear zone, porphyry and alteration system, as well as shear related mineralisation and vein systems parallel to the margins of the porphyry. Within the main shear zone, alteration of the mafic and ultramafic rocks is evident along one or both margins of the porphyry, and in areas where the porphyry is absent. The alteration assemblage ranges from talc-carbonate-chlorite in the distal parts of the system to carbonate-chlorite in the intermediate parts of the alteration package. The proximal alteration assemblage is typically quartz-carbonate-fuchsite±sulphide.

## **QUARTZ-CARBONATE-SULPHIDE STOCKWORK VEIN AND ALTERATION RELATED MINERALISATION**

The Quartz-Carbonate-Sulphide stockwork vein and alteration related mineralisation is the dominant style of mineralisation evident within the ultramafic sequence to the east of the central Paddy's Flat shear zone. Mineralisation of this type extends from Phar lap pit in the south, to Macquarie pit in the north of Paddy's Flat, and possible as far as the New Orleans pit to the north of Paddy's Flat and the Globe pit to the south of Paddy's Flat. Although the location of the mineralisation relative to the Paddy's Flat shear zone is consistent, there is significant variation in the alteration assemblages observed, the grade of gold and the metallurgical recovery from the deposits that make up this style of mineralisation. This style of mineralisation is characterised by 5 – 50m wide alteration zones within ultramafic rocks and moderate to high sulphide content.

## **THE YALOGINDA MINING CENTRE**

The Yaloginda mining centre is a gold-bearing Archaean greenstone belt situated ~15km south of Meekatharra (Murchison Province, Western Australia) and encompasses the Bluebird mining and processing facility, adjacent to the Great Northern Highway. The deposits in the area are hosted in a strained and metamorphosed volcanic sequence that consists primarily of ultramafic and high-magnesium basalt with minor komatiite, peridotite, gabbro, tholeiitic basalt and interflow sediments. The sequence was intruded by a variety of felsic porphyry and intermediate sills and dykes.

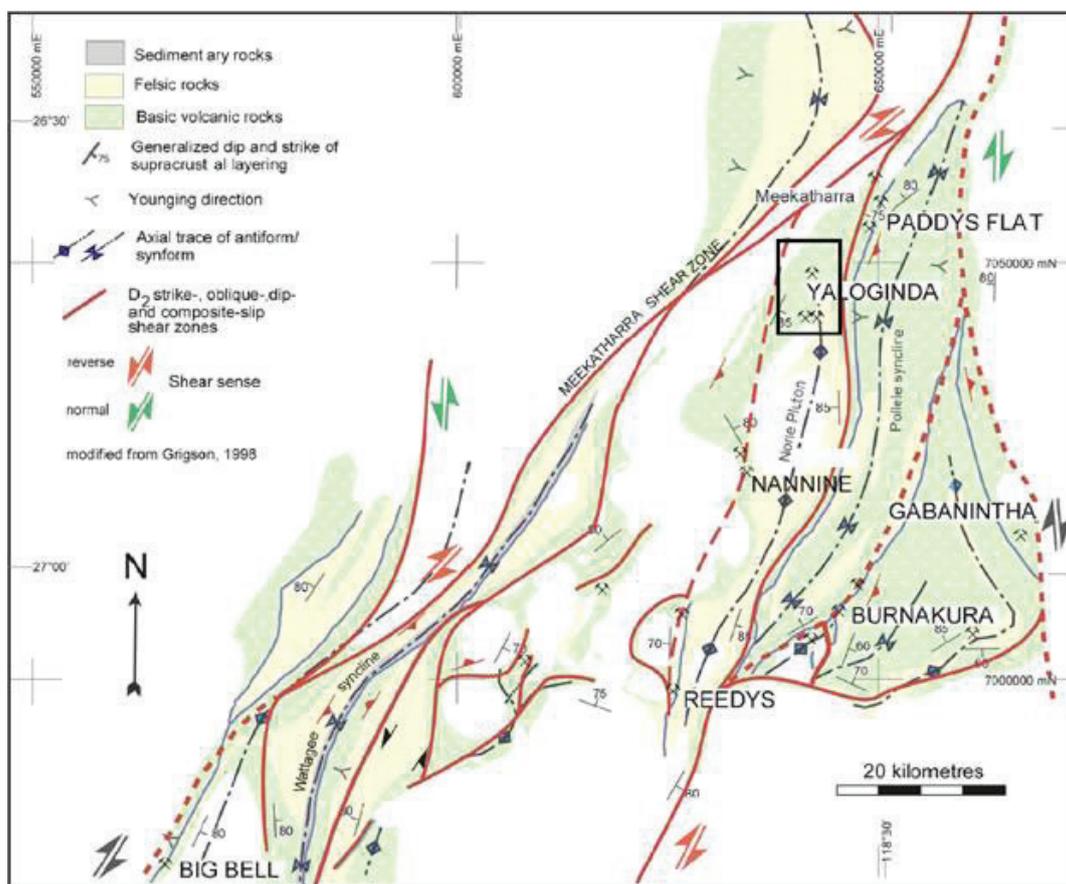


Figure 11. Simplified geology of the Murchison goldfields showing greenstone belts, major structures and lithological assemblages. Yaloginda area highlighted in black.

Deformation in the area is complex and heterogeneously distributed, rocks are strongly foliated to completely undeformed. Early regional-scale recumbent, isoclinal folding was followed by variably-developed, upright NNE-NNW trending folding that dominates the structural trends in the area. Some of the felsic porphyry intruded into the hinge zones during the development of these folds. Differential and progressive deformation during this episode led to the development of similar trending, steeply dipping, mainly reverse dextral fault/shear systems that nucleated on fold limbs and hinge zones. Rheological differences resulted in the focussing of strain at contacts between different lithotypes.

Gold mineralisation is not limited to a particular rock type at Yaloginda. Instead, the location of mineralisation is structurally/rheologically controlled. Mineralisation styles fit into two main categories - 'shear zone' style and vein-related 'lode' style. In the shear zone style mineralisation, pervasive zones of metasomatism and associated low-grade gold mineralisation (< 0.7 g/t Au) have resulted from gold-bearing fluid that has exploited the vertically connective fault/shear systems and high-strain domains that developed late during NNE-NNW trending folding. Alteration assemblages proximal to gold typically include quartz, Fe- carbonate, pyrite, +/- fuchsite, +/- chlorite +/- sericite. Distal halos of weak Fe-carbonate +/- mica alteration.

Vein-related high-grade lode gold is associated with zones of intense, variably orientated quartz +/- carbonate +/- chlorite veining, commonly with sulphides within veins or their selvage. Such high-grade lodes tend to overprint rocks with coarse textures at structurally complex sites, such as at the contact of rheologically contrasting units, or the intersection of stronger rocks and fault/shear zone structures. Favourable vein orientations for Au mineralisation include moderate to shallow dipping east-west striking veins, horizontal veins and arrays of sigmoidal [tension gash] veins. Tension gash kinematics are generally top-to-the west, consistent with the reverse dextral kinematics on the fault-shear zone systems. Gold grades are locally enriched in the vicinity of brittle to semi-brittle cross-structures that include late steep northeast-southwest to east-west trending faults which displace gold lodes.

## RESOURCE TO RESERVE CONVERSION METHODOLOGY

### DATABASE

Data used in resource estimations is currently stored in a Maxwell's DataShed system based on the Sequel Server platform which is currently considered "industry standard".

As new data is acquired it passes through a validation approval system designed to pick up any significant errors before the information is loaded into the master database. The information is uploaded by a series of Sequel routines and is performed as required.

The database contains data from a range of drilling techniques and sampling methodologies. These include, but are not exclusive to:

- Diamond drilling [including Geotechnical, structural and specific gravity data]
- Reverse Circulation drilling;
- Percussion drilling;
- Aircore drilling;
- Face Chip data;
- Sludge drilling.

By its nature this database is large in size, and therefore exports from the main database are undertaken (with or without the application of spatial and various other filters) to create a database of workable size. This preserves the integrity of the master database and provides a snapshot of the database at the time of resource modelling and interpretation.

### ESTIMATION TECHNIQUES

Three dimensional block models are used for resource estimation at the CMGP. All modelling and estimation work undertaken by MLX is carried out in three dimensions utilising Surpac Vision or similar software.

After validating the drillhole data to be used in the estimation, interpretation of the orebody is undertaken in sectional and / or plan view to create the outline strings which form the basis of the three dimensional orebody wireframe. Wireframing is then carried out using a combination of automated stitching algorithms and manual triangulation to create an accurate three dimensional representation of the sub-surface mineralised body.

From here, drill-hole intersections within the mineralised body are defined, these intersections are then used to flag the appropriate sections of the drillhole database tables for compositing purposes. Drillholes are subsequently composited to allow for grade estimation. Generally only AC, RC and diamond drilling data as well as face sampling data are used to inform a resource model due to the perceived increased potential for contamination of the open hole sludge and RAB drilling techniques. However, in the absence of other information sludge and RAB hole data is used to guide the interpreted form of the orebody although not to inform the orebody grade.

Once the sample data has been composited, a statistical analysis is undertaken to assist with determining estimation search parameters, top-cuts etc. Variographic analysis of individual domains is undertaken to assist with determining appropriate search parameters. Although, in the case of many smaller populations, variography will only provide partial guidance as to appropriate estimation parameters, which are then incorporated with observed geological and geometrical features to determine the most appropriate search parameters.

An empty block model is then created for the area of interest. This model contains attributes set at background values for the various elements of interest as well as density, and various estimation parameters that are subsequently used to assist in resource categorisation. The block sizes used in the model will vary depending on orebody geometry, minimum mining units, and levels of informing data available.

Grade estimation is undertaken within the empty block model, utilising the created wireframes as hard boundaries. Search parameters, deemed appropriate from statistical studies and geological interpretations, are utilised when informing the model via interpolation of created downhole composite files. Generally speaking the Ordinary Kriging estimation method is considered standard for all MLX work, although in some circumstances where sample populations are small, or domains are unable to be accurately defined, inverse distance weighting estimation techniques will be used.

The resource is then depleted for mining voids and subsequently classified in line with JORC guidelines, utilising a combination of various estimation derived parameters and geological / mining knowledge. Subsequent to this classification the resource model is then passed onto Mine Planning for review and determination of reserves.

## **RESOURCE TO RESERVE CONVERSION**

Current MLX practice is to undertake detailed economic assessment using all available and relevant aspects impacting the economic extraction and processing of the ores to produce a saleable gold dore. This will typically include the completion of detailed mine design, the application of appropriate dilution and mining recovery assumptions, the consideration of ore cartage, ore processing, administration costs and metallurgical factoring and recoveries. A fixed gold price of A\$1400 per ounce is applied for revenue estimates and economic assessment.

Refer to appendices for detail.

**CENTRAL MURCHISON GOLD PROJECT**  
**MINERAL RESOURCE ESTIMATE – DECEMBER 2014**

Ore Body	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)
<b>OPEN PIT</b>												
Paddy's Flat	0	0	0	21.5	1.2	801.1	11.3	1.1	395.3	32.8	1.1	1,196.4
Yaloginda	0	0	0	8.8	1.5	435.0	9.6	1.5	452.1	18.4	1.5	887.1
Reedy	0	0	0	0.6	2.7	53.4	2.2	1.8	131.7	2.9	2.0	185.1
Day Dawn	0.1	1.4	4.9	3.4	1.8	192.9	2.5	1.5	118.0	6.0	1.6	315.8
Cuddingwarra	0	0	0	3.0	2.2	205.2	4.0	2.7	350.8	7.0	2.5	556.0
Big Bell	0	0	0	8.2	1.7	458.9	3.4	1.6	173.7	11.7	1.7	632.6
<b>SUB TOTAL</b>	<b>0.1</b>	<b>1.4</b>	<b>4.9</b>	<b>45.5</b>	<b>1.5</b>	<b>2,146.5</b>	<b>33.1</b>	<b>1.5</b>	<b>1,621.6</b>	<b>78.8</b>	<b>1.5</b>	<b>3,773.0</b>
<b>UNDERGROUND</b>												
Paddy's Flat	0	0	0	5.3	3.4	571.2	2.6	3.8	314.8	7.9	3.5	886.0
Yaloginda	0	0	0	0	0	0	0	0	0	0	0	0
Reedy	0	0	0	1.0	3.6	114.4	2.3	2.8	206.0	3.3	3.0	320.4
Day Dawn	0	0	0	1.9	9.5	565.0	0.1	5.4	15.8	1.9	9.3	580.8
Cuddingwarra	0	0	0	0	0	0	0	0	0	0	0	0
Big Bell	0	0	0	20.5	2.8	1,854.3	11.5	2.7	982.0	31.9	2.8	2,836.3
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28.6</b>	<b>3.4</b>	<b>3,104.8</b>	<b>16.5</b>	<b>2.9</b>	<b>1,518.6</b>	<b>45.1</b>	<b>3.2</b>	<b>4,623.5</b>
<b>OTHER</b>												
Stockpiles	0	0	0	0.6	0.7	14.0	0	0	0	0.6	0.7	14.0
Tails	0	0	0	3.7	0.7	84.5	0	0	0	3.7	0.7	84.5
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4.4</b>	<b>0.7</b>	<b>98.4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4.4</b>	<b>0.7</b>	<b>98.5</b>
<b>GRAND TOTAL</b>	<b>0.1</b>	<b>1.4</b>	<b>4.9</b>	<b>78.5</b>	<b>2.1</b>	<b>5,349.7</b>	<b>49.6</b>	<b>2.0</b>	<b>3,140.3</b>	<b>128.0</b>	<b>2.1</b>	<b>8,495.0</b>

**CENTRAL MURCHISON GOLD PROJECT**  
**ORE RESERVE ESTIMATE – DECEMBER 2014**

Ore Body	Proven			Probable			Total		
	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)	Tonnes (Mt)	Grade (g/t)	Ounces (koz)
<b>OPEN PIT</b>									
Paddy's Flat	0	0	0	0	0	0	0	0	0
Yaloginda	0	0	0	0.3	2.6	27.5	0.3	2.6	27.5
Reedy	0	0	0	0.4	2.5	32.0	0.4	2.5	32.0
Day Dawn	0	0	0	1.0	1.9	58.1	1.0	1.9	58.1
Cuddingwarra	0	0	0	0.1	2.7	10.9	0.1	2.7	10.9
Big Bell	0	0	0	1.8	2.0	119.4	1.8	2.0	119.4
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.6</b>	<b>2.1</b>	<b>247.9</b>	<b>3.6</b>	<b>2.1</b>	<b>247.9</b>
<b>UNDERGROUND</b>									
Paddy's Flat	0	0	0	3.4	4.0	435.5	3.5	4.2	435.5
Yaloginda	0	0	0	0	0	0	0	0	0
Reedy	0	0	0	0.5	3.7	59.5	0.5	3.7	59.5
Day Dawn	0	0	0	2.0	7.9	508.4	2.0	7.9	508.4
Cuddingwarra	0	0	0	0	0	0	0	0	0
Big Bell	0	0	0	8.0	2.7	682.5	8.0	2.7	682.5
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13.9</b>	<b>3.8</b>	<b>1,685.9</b>	<b>13.9</b>	<b>3.8</b>	<b>1,685.9</b>
<b>OTHER STOCKS</b>									
Stockpiles	0	0	0	0.3	0.9	8.2	0.3	0.9	8.2
Old BB Tails	0	0	0	3.4	0.7	76.4	3.4	0.7	76.4
<b>SUB TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3.7</b>	<b>0.7</b>	<b>84.5</b>	<b>3.7</b>	<b>0.7</b>	<b>84.5</b>
<b>GRAND TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21.2</b>	<b>3.0</b>	<b>2,018.3</b>	<b>21.2</b>	<b>3.0</b>	<b>2,018.3</b>

## Section 1 Sampling Techniques and Data

[Criteria in this section apply to all succeeding sections.]

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>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.</li> </ul>	<ul style="list-style-type: none"> <li>Diamond Drilling           <p>A significant portion of the data used in resource calculations at the CMGP has been gathered from diamond core. Multiple sizes have been used historically. This core is geologically logged and subsequently halved for sampling. Grade control holes may be whole-cored to streamline the core handling process if required.</p> </li> <li>Face Sampling           <p>At each of the major past underground producers at the CMGP, each development face / round is horizontally chip sampled. The sampling intervals are dominated by geological constraints (e.g. rock type, veining and alteration / sulphidation etc.). The majority of exposures within the orebody are sampled.</p> </li> <li>Sludge Drilling           <p>Sludge drilling at the CMGP was performed with an underground production drill rig. It is an open hole drilling method using water as the flushing medium, with a 64mm (nominal) hole diameter. Sample intervals are ostensibly the length of the drill steel. Holes are drilled at sufficient angles to allow flushing of the hole with water following each interval to prevent contamination.</p> <p>Sludge drilling is not used to inform resource models.</p> </li> <li>RC Drilling           <p>RC drilling has been utilised at the CMGP.</p> <p>Drill cuttings are extracted from the RC return via cyclone. The underflow from each interval is transferred via bucket to a four tiered riffle splitter, delivering approximately three kilograms of the recovered material into calico bags for analysis. The residual material is retained on the ground near the hole. Composite samples are obtained from the residue material for initial analysis, with the split samples remaining with the individual residual piles until required for re-split analysis or eventual disposal.</p> </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 orientated and if so, by what method, etc).</li> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> </ul>	
Drill sample recovery	<ul style="list-style-type: none"> <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>	

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• RAB / Aircore Drilling  Combined scoops from bucket dumps from cyclone for composite. Split samples taken from individual bucket dumps via scoop. RAB holes not included in the resource estimate.</li> <li>• Blast Hole Drilling  Cuttings sampled via splitter tray per individual drill rod. Blast holes not included in the resource estimate.</li> <li>• All geology input is logged and validated by the relevant area geologists, incorporated into this is assessment of sample recovery. No defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential</li> <li>• Loss or gain of fine or coarse material been noted.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Diamond core is logged geologically and geotechnically.</li> <li>• RC / RAB / AC / Blast hole chips are logged geologically.</li> <li>• Development faces are mapped geologically.</li> <li>• Logging is quantitative in nature.</li> <li>• All holes are logged completely, all faces are mapped completely.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><i>Sub-sampling techniques and sample preparation</i></p>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Blast holes -Sampled via splitter tray per individual drill rods.</li> <li>• RAB / AC chips - Combined scoops from bucket dumps from cyclone for composite. Split samples taken from individual bucket dumps via scoop.</li> <li>• RC - Three tier riffle splitter (approximately 5kg sample). Samples generally dry.</li> <li>• Face Chips - Nominally chipped horizontally across the face from left to right, sub-set via geological features as appropriate.</li> <li>• Diamond Drilling - Half-core niche samples, sub-set via geological features as appropriate. Grade control holes may be whole-cored to streamline the core handling process if required.</li> <li>• Chips / core chips undergo total preparation.</li> <li>• Samples undergo fine pulverisation of the entire sample by an LM5 type mill to achieve a 75µ product prior to splitting.</li> <li>• QA/QC is currently ensured during the sub-sampling stages process via the use of the systems of an independent NATA / ISO accredited laboratory contractor. A significant portion of the historical informing data has been processed by in-house laboratories.</li> <li>• The sample size is considered appropriate for the grain size of the material being sampled.</li> <li>• The un-sampled half of diamond core is retained for check sampling if required.</li> <li>• For RC chips regular field duplicates are collected and analysed for significant variance to primary results.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Recent drilling was analysed by fire assay as outlined below; <ul style="list-style-type: none"> <li>A 50g sample undergoes fire assay lead collection followed by flame atomic adsorption spectrometry.</li> <li>The laboratory includes a minimum of 1 project standard with every 22 samples analysed.</li> <li>Quality control is ensured via the use of standards, blanks and duplicates.</li> </ul> </li> <li>No significant QA/QC issues have arisen in recent drilling results.</li> <li>Historical drilling has used a combination of Fire Assay, Aqua Regia and PAL analysis.</li> <li>These assay methodologies are appropriate for the resource in question.</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Anomalous intervals as well as random intervals are routinely checked assayed as part of the internal QA/QC process.</li> <li>Virtual twinned holes have been drilled in several instances across all sites with no significant issues highlighted. Drillhole data has also routinely been confirmed by development assay data in the operating environment.</li> <li>Primary data is loaded into the drillhole database system and then archived for reference.</li> <li>All data used in the calculation of resources and reserves are compiled in databases (underground and open pit) which are overseen and validated by senior geologists.</li> <li>No primary assays data is modified in any way.</li> </ul>
<i>Location of data points</i>	<ul style="list-style-type: none"> <li><i>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>All data is spatially oriented by survey controls via direct pickups by the survey department. Drillholes are all surveyed downhole, deeper holes with a Gyro tool if required, the majority with single / multishot cameras.</li> <li>All drilling and resource estimation is undertaken in local mine grid at the various sites.</li> <li>Topographic control is generated from a combination of remote sensing methods and ground-based surveys. This methodology is adequate for the resource in question.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Data spacing is variable dependent upon the individual orebody under consideration. A lengthy history of mining has shown that this approach is appropriate for the Mineral Resource estimation process and to allow for classification of the resource as it stands.</li> <li>• Compositing is carried out based upon the modal sample length of each individual domain.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drilling intersections are nominally designed to be normal to the orebody as far as underground infrastructure constraints / topography allows.</li> <li>• Development sampling is nominally undertaken normal to the various orebodies.</li> <li>• It is not considered that drilling orientation has introduced an appreciable sampling bias.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples are delivered to a third party transport service, who in turn relay them to the independent laboratory contractor. Samples are stored securely until they leave site.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Site generated resources and reserves and the parent geological data is routinely reviewed by the Metals X Corporate technical team.</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 CMGP comprises 6 granted exploration leases, 10 granted general purpose leases, 31 granted miscellaneous leases, 210 granted mining leases and 14 granted prospecting leases.</li> <li>Native title interests are recorded against several CMGP tenements.</li> <li>The CMGP tenements are held by the Big Bell Gold Operations (BBGO) of which Metals X has 100% ownership.</li> <li>Several third party royalties exist across various tenements at CMGP, over and above the state government royalty.</li> <li>BBGO operates in accordance with all environmental conditions set down as conditions for grant of the leases.</li> <li>There are no known issues regarding security of tenure.</li> <li>There are no known impediments to continued operation.</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>The CMGP area has an exploration and production history in excess of 100 years.</li> <li>On balance, BBGO work has generally confirmed the veracity of historic exploration data.</li> </ul>

Criteria	JORC Code explanation	Commentary
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The CMGP is located in the Achaean Murchison Province, a granite-greenstone terrane in the northwest of the Yilgarn Craton. Greenstone belts trending north-northeast are separated by granite-gneiss domes, with smaller granite plutons also present within or on the margins of the belts.</li> <li>• Mineralisation at Big Bell is hosted in the shear zone (Mine Sequence) and is associated with the post-peak metamorphic retrograde assemblages. Stibnite, native antimony and trace arsenopyrite are disseminated through the K-feldspar-rich lode schist. These are intergrown with pyrite and pyrrhotite and chalcopyrite. Mineralisation outside the typical Big Bell host rocks (KPSH), for example 1,600N and Shocker, also display a very strong W-As-Sb geochemical halo.</li> <li>• Numerous gold deposits occur within the Cuddingwarra Project area, the majority of which are hosted within the central mafic-ultramafic ± felsic porphyry sequence. Within this broad framework, mineralisation is shown to be spatially controlled by competency contrasts across, and flexures along, layer-parallel D2 shear zones, and is maximised when transected by corridors of northeast striking D3 faults and fractures.</li> <li>• The Great Fingall Dolerite hosts the majority gold mineralisation within the portion of the greenstone belt proximal to Cue (The Day Dawn Project Area). Unit AGF3 is the most brittle of all the five units and this characteristic is responsible for its role as the most favourable lithological host to gold mineralisation in the Greenstone Belt.</li> <li>• The Paddy's Flat area is located on the western limb of a regional fold, the Polelle Syncline, within a sequence of mafic to ultramafic volcanics with minor interflow sediments and banded iron-formation. The sequence has also been intruded by felsic porphyry dykes prior to mineralisation. Mineralisation is located along four sub-parallel trends at Paddy's Flat which can be summarized as containing three dominant mineralisation styles: <ul style="list-style-type: none"> <li>• Sulphide replacement BIF hosted gold.</li> <li>• Quartz vein hosted shear-related gold.</li> <li>• Quartz-carbonate-sulphide stockwork vein and alteration related gold.</li> </ul> </li> <li>• The Yaloginda area is a gold-bearing Archaean greenstone belt situated ~15km s at the sheared contacts of dolerite, basalt, ultramafic schist, quartz-feldspar porphyry, and shale.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>• south of Meekatharra. The deposits in the area are hosted in a strained and metamorphosed volcanic sequence that consists primarily of ultramafic and high-magnesium basalt with minor komatiite, peridotite, gabbro, tholeiitic basalt and interflow sediments. The sequence was intruded by a variety of felsic porphyry and intermediate sills and dykes.</li> <li>• The Reedy's mining district is located approximately 15 km to the south-east to Meekatharra and to the south of Lake Annean. The Reedy gold deposits occur within a north-south trending greenstone belt, two to five kilometres wide, composed of volcano-sedimentary sequences and separated multiphase syn- and post-tectonic granitoid complexes. Structurally controlled the gold occur</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drillhole information is being presented in this release.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drillhole information is being presented in this release.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>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').</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drillhole information is being presented in this release.</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drillhole information is being presented in this release.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drillhole information is being presented in this release.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drillhole information is being presented in this release.</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Exploration and mine planning assessment continues to take place at the CMGP.</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>Drillhole data is stored in a Maxwell's DataShed system based on the Sequel Server platform which is currently considered "industry standard".</li> <li>As new data is acquired it passes through a validation approval system designed to pick up any significant errors before the information is loaded into the master database. The information is uploaded by a series of Sequel routines and is performed as required. The database contains diamond drilling (including geotechnical and specific gravity data), face chip and sludge drilling data and some associated metadata. By its nature this database is large in size, and therefore exports from the main database are undertaken (with or without the application of spatial and various other filters) to create a database of workable size, preserve a snapshot of the database at the time of orebody modelling and interpretation and preserve the integrity of the master database.</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>Mr Russell has had in excess of seven years of experience in a production / resource development capacity at the site and visits on an "as required" basis.</li> </ul>
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>Mining has occurred since 1800's providing significant confidence in the currently geological interpretation across all projects.</li> <li>No alternative interpretations are currently considered viable.</li> <li>Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource figure was both sufficiently constrained, and representative of the expected sub-surface conditions. In all aspects of resource estimation the factual and interpreted geology was used to guide the development of the interpretation.</li> <li>The structural regime is the dominant control on geological and grade continuity at the CMGP. Lithological factors such as rheology contrast are secondary controls on grade distribution.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Dimensions</i>	<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>Individual deposit scales vary across the CMGP.</li> <li>The Big Bell Trend is mineralised a strike length of &gt;3,900m, a lateral extent of up +50m and a depth of over 1,500m.</li> <li>Great Fingall is mineralised a strike length of &gt;500m, a lateral extent of &gt;600m and a depth of over 800m.</li> <li>Black Swan South is mineralised a strike length of &gt;1,700m, a lateral extent of up +75m and a depth of over 300m.</li> <li>The Paddy's Flat Trend is mineralised a strike length of &gt;3,900m, a lateral extent of up +230m and a depth of over 500m.</li> <li>Bluebird is mineralised a strike length of &gt;1,800m, a lateral extent of up +50m and a depth of over 500m.</li> <li>Triton – South Emu is mineralised a strike length of &gt;1,100m, a lateral extent of several metres and a depth of over 500m.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><i>Estimation and modelling techniques</i></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All modelling and estimation work undertaken by Metals X is carried out in three dimensions via Surpac Vision.</li> <li>• After validating the drillhole data to be used in the estimation, interpretation of the orebody is undertaken in sectional and / or plan view to create the outline strings which form the basis of the three dimensional orebody wireframe. Wireframing is then carried out using a combination of automated stitching algorithms and manual triangulation to create an accurate three dimensional representation of the sub-surface mineralised body.</li> <li>• Drillhole intersections within the mineralised body are defined, these intersections are then used to flag the appropriate sections of the drillhole database tables for compositing purposes. Drillholes are subsequently composited to allow for grade estimation. In all aspects of resource estimation the factual and interpreted geology was used to guide the development of the interpretation.</li> <li>• Once the sample data has been composited, a statistical analysis is undertaken to assist with determining estimation search parameters, top-cuts etc. Variographic analysis of individual domains is undertaken to assist with determining appropriate search parameters. Which are then incorporated with observed geological and geometrical features to determine the most appropriate search parameters.</li> <li>• An empty block model is then created for the area of interest. This model contains attributes set at background values for the various elements of interest as well as density, and various estimation parameters that are subsequently used to assist in resource categorisation. The block sizes used in the model will vary depending on orebody geometry, minimum mining units, estimation parameters and levels of informing data available.</li> <li>• Grade estimation is then undertaken, with ordinary kriging estimation method is considered as standard, although in some circumstances where sample populations are small, or domains are unable to be accurately defined, inverse distance weighting estimation techniques will be used. Both by-product and deleterious elements are estimated at the time of primary grade estimation if required. It is assumed that by-products correlate well with gold. There are no assumptions made about the recovery of by-products.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>The resource is then depleted for mining voids and subsequently classified in line with JORC guidelines utilising a combination of various estimation derived parameters and geological / mining knowledge.</li> <li>This approach has proven to be applicable to Metals X's gold assets.</li> <li>Estimation results are routinely validated against primary input data, previous estimates and mining output.</li> <li>Good reconciliation between mine claimed figures and milled figures was routinely achieved during past production history.</li> </ul>
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>Tonnage estimates are dry tonnes.</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>The surface resource reporting cut-off grade is 0.7g/t Au.</li> <li>Underground resource reporting cut-off grade is varies from 1.5g/t though to 4g/t dependent upon orebody and location.</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>Not considered for Mineral Resource. Applied during the Reserve generation process.</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>Not considered for Mineral Resource. Applied during the Reserve generation process.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Environmental factors or assumptions</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• BBGO operates in accordance with all environmental conditions set down as conditions for grant of the respective leases.</li> </ul>
<i>Bulk density</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Bulk density of the mineralisation at the CMGP is variable and is for the most part lithology rather than mineralisation dependent. Bulk density sampling is undertaken via assessments of drill core and grab samples.</li> <li>• A significant past mining history has validated the assumptions made surrounding bulk density at the CMGP.</li> </ul>
<i>Classification</i>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>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).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Resources are classified in line with JORC guidelines utilising a combination of various estimation derived parameters, the input data and geological / mining knowledge.</li> <li>• This approach considers all relevant factors and reflects the Competent Person's view of the deposit.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Resource estimates are peer reviewed by the site technical team as well as Metals X's Corporate technical team.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><i>Discussion of relative accuracy/ confidence</i></p>	<ul style="list-style-type: none"> <li>• <i>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.</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>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>• All currently reported resources estimates are considered robust, and representative on both a global and local scale.</li> <li>• A significant history of mining with good reconciliation of mine claimed to mill recovered provides confidence in the accuracy of the estimates for the CMGP.</li> </ul>

## Section 4 Estimation and Reporting of Ore Reserves

[Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.]

Criteria	JORC Code explanation	Commentary								
Mineral Resource estimate for conversion to Ore Reserves	<ul style="list-style-type: none"> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	All resources are inclusive of reserves.								
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>Mr Michael Poepjes visited the CMGP on multiple occasions in 2014 whilst compiling these reserve estimates.</li> </ul>								
Study status	<ul style="list-style-type: none"> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>A budget level study has been completed on the all the contained reserves.</li> <li>Full mine design exists for all reserves.</li> <li>An economic evaluation has been carried out on the reserves to ensure viability.</li> <li>Appropriate modifying factors have been used.</li> </ul>								
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>The cut-off grade used for inclusion in the CMGP Reserve varies by mining methodology and is based on economic assessment and current operating and market parameters.</li> <li>No co-product revenue has been included in evaluations.</li> </ul> <table border="1"> <thead> <tr> <th>Reserve</th> <th>Cut Off Grade Applied</th> </tr> </thead> <tbody> <tr> <td>All Open Pits</td> <td>1.0 g/t</td> </tr> <tr> <td>Big Bell Underground</td> <td>1.5 g/t</td> </tr> <tr> <td>Other Underground Operations</td> <td>2.0g/t</td> </tr> </tbody> </table>	Reserve	Cut Off Grade Applied	All Open Pits	1.0 g/t	Big Bell Underground	1.5 g/t	Other Underground Operations	2.0g/t
Reserve	Cut Off Grade Applied									
All Open Pits	1.0 g/t									
Big Bell Underground	1.5 g/t									
Other Underground Operations	2.0g/t									

Criteria	JORC Code explanation	Commentary
<i>Mining factors or assumptions</i>	<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> <li>• <i>Any minimum mining widths used.</i></li> <li>• <i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></li> <li>• <i>The infrastructure requirements of the selected mining methods.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Pit and underground reserves have all been subject to detailed mine design.</li> <li>• Stockpile resources have been converted to reserves by application of appropriate modifying factors.</li> <li>• Budget Evaluations have incorporated dewatering requirements.</li> <li>• Open Pit geotechnical parameters have been supplied by Geotechnical Consultant following site inspection.</li> <li>• Open Pits have been designed to ensure a minimum 12m bench width.</li> <li>• Inferred Mineral Resources are used within the mining study. These have not been included in the reserve.</li> </ul>
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li>• <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></li> <li>• <i>Whether the metallurgical process is well-tested technology or novel in nature.</i></li> <li>• <i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></li> <li>• <i>Any assumptions or allowances made for deleterious elements.</i></li> <li>• <i>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.</i></li> <li>• <i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></li> </ul>	<ul style="list-style-type: none"> <li>• The industry standard CIL process will be used treat CMGP ore. This has a demonstrated applicability to the styles of mineralisation present at the CMGP.</li> <li>• The CIL process is well proven.</li> <li>• Significant metallurgical test-work has been undertaken. A significant past production history exists to validate the test-work results.</li> <li>• No significant deleterious elements are known. As such there is no allowance for deleterious elements in the process.</li> <li>• Metallurgical recoveries on the various ore and grades were considered as part of the cut-off grade analysis.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Environmental</i>	<ul style="list-style-type: none"> <li><i>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 approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<ul style="list-style-type: none"> <li>A Clearing Permit covering all reserves and associated infrastructure has been approved.</li> <li>Department of Water Licence to Take Water approvals are in place to allow dewatering of all mines within reserve estimate.</li> <li>DEC Works Approval has been granted for Dewatering activities.</li> <li>Hydrogeology, Waste and Soil characterisation studies have been undertaken.</li> <li>Yet to submit application for Mining Proposal for Waste Dumps or Tails Storage Facility.</li> </ul>
<i>Infrastructure</i>	<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>Sufficient space is availability on existing granted tenements to allow mining and associated infrastructure to extract reserves.</li> <li>Power will be supplied by diesel or gas generation onsite.</li> </ul>
<i>Costs</i>	<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 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>Capital Costs were estimated as part of the budget process. A majority of the capital costs are mine development costs. Current Mine Contractor costs have been used to derive the capital costs.</li> <li>Operating Costs were estimated as part of the budget process.</li> <li>WA State Government 2.5% applies</li> <li>Other minor private royalties are payable to different parties.</li> <li>All royalties have been included in both the derivation of Cut-Off Grades and to ensure profitability of operations.</li> </ul>
<i>Revenue factors</i>	<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>Reserves are based upon an AUD\$1,400 per fine gold oz revenue assumption.</li> <li>Costs for bullion transport and refining in Perth. No allowances for additional costs or penalties and no allowance for silver revenue.</li> </ul>

Criteria	JORC Code explanation	Commentary
Market assessment	<ul style="list-style-type: none"> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <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>	<ul style="list-style-type: none"> <li>There remains strong demand and no apparent risk to the long term demand for the gold generated from the project.</li> </ul>
Economic	<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>For the CMGP, an 8% real discount rate is applied to NPV analysis.</li> <li>Sensitivity analysis of key financial and physical parameters is applied to future development project considerations and mine.</li> </ul> <p>The reduced scale of the project will allow internal funding mechanisms.</p>
Social	<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>The CMGP is yet to start and requires some further environmental and other regulatory permitting.</li> </ul>
Other	<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>No operational or marketing contracts have been awarded but the budget assumptions are based upon common WA operational experience giving confidence in their validity.</li> <li>Statutory approvals and licence applications are either in place or substantially prepared and no delays or hindrances to project development are anticipated.</li> </ul>
Classification	<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 basis for classification of the reserve into different categories is the resource status.</li> <li>This reserve is based entirely upon indicated resources (no Measured Resources).</li> <li>The result appropriately reflects the Competent Person's view of the deposit.</li> </ul>

Criteria	JORC Code explanation	Commentary
Audits or reviews	<input type="checkbox"/> <i>The results of any audits or reviews of Ore Reserve estimates.</i>	<ul style="list-style-type: none"> <li>Site generated reserves and the parent data and economic evaluation data is routinely reviewed by the Metals X Corporate technical team. Resources and Reserves have in the past been subjected to external expert reviews, which have ratified them with no issues. There is no regular external consultant review process in place.</li> </ul>
Discussion of relative accuracy/ confidence	<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>The ore reserve has been completed to a budget standard and benchmarked against local site historical production and experience hence confidence in the estimate is high.</li> </ul>