

# AS RELEASE

10th September 2019

ACN 001 717 540 ASX code: RMS

10 September 2019

#### **ISSUED CAPITAL**

Ordinary Shares: 658M

#### **DIRECTORS**

Non-Executive Chairman: Kevin Lines Managing Director: Mark Zeptner Non-Executive Directors: Michael Bohm David Southam

COMPANY SECRETARY: Richard Jones

www.rameliusresources.com.au

ramelius@rameliusresources.com.au

#### RAMELIUS RESOURCES LIMITED

#### **Registered Office**

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## **RESOURCES AND RESERVES STATEMENT 2019**

The Directors of Ramelius Resources Limited (**ASX: RMS**) are pleased to announce new estimates of Mineral Resources and Ore Reserves as at 30 June 2019, with Mineral Resources **up 18%** and Ore Reserves **up 20%** for the year, after mining depletion.

Total **Mineral Resources** are estimated to be;

81 Mt at 1.6 g/t Au for 4.1 Moz of gold

Total **Ore Reserves** are estimated to be;

15 Mt at 1.8 g/t Au for 840 koz of gold

Increases were largely achieved via the acquisition of the Marda and Tampia projects. As in previous years, Ramelius' ability to meet production guidance has been underpinned by realistic resource modelling and deliverable reserve estimates.

Due to the 30 June 2019 cut-off date applying for this statement, gold price assumptions used for Ore Reserves range from A\$1,650/oz to A\$1,800/oz. Gold price assumptions used for Resources and Reserves will be reviewed and updated on an ongoing basis.

Managing Director, Mr Mark Zeptner today said:

"This year, we have seen healthy overall increases, especially in Ore Reserves, mainly due to the acquisition of Marda and Tampia, whilst at the same time maintaining circa 200,000 ounces of gold production for the 2019 financial year.

Given our exploration spend remains at Company record levels of approximately A\$20M for the 2020 financial year, we are looking forward to Resource and Reserve conversions at our exciting Eridanus, Vivien, Edna May & Symes Find projects whilst looking to grow the baseline Reserves at both Marda and Tampia as we come to fully understand their true potential."

Detailed tables of Resources and Reserves are shown below.

For further information contact:

#### Investor enquiries:

### Mark Zeptner

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#### **Tim Manners**

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#### Media enquiries:

#### Luke Forrestal

Associate Director Media & Capital Partners Ph: +61 411 479 144

#### **ABOUT RAMELIUS**

Ramelius owns and operates the Mt Magnet, Edna May and Vivien gold mines, all in Western Australia (refer Figure 1). Ore from the high-grade Vivien underground mine, located near Leinster, is trucked to the Mt Magnet processing plant where it is blended with ore from both underground and open pit sources. The Edna May operation, purchased from Evolution Mining Limited in October 2017, is currently processing high grade underground ore and low grade stockpiles. Additional ore feed is planned from the adjacent Greenfinch open pit and satellite Marda and Tampia open pit projects.



Figure 1: Ramelius' Operations & Development Project Locations

Ramelius published a one million ounce mine plan in June 2019, across five years from FY20 to FY24, highlighting the longer term potential that exists within the current asset base. The Company has made a concerted effort in recent years to grow both the Mineral Resource and Ore Reserve base and this is shown below in Figure 2.

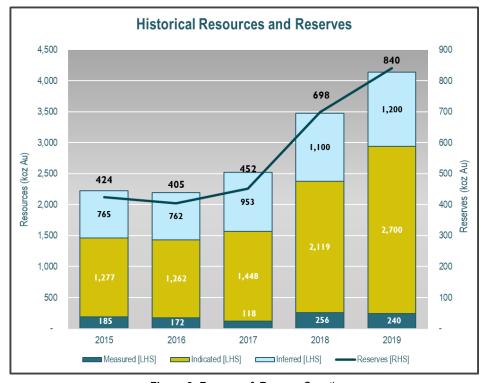


Figure 2: Resource & Reserve Growth

#### **MINERAL RESOURCES**

Table A: Mineral Resources

	Table A: Mineral		IEDAL	PESOUPO	ES AS AT 30	HIME	2010 - INC	LUSIVE OF F	ESEDI	/ES			
Duniont	Donosit			RESOURC			2019 - INC			/ES	Tatal	D	,
Project	Deposit		easured			ndicated			nferred			Resour	
	Galaxy Group	92,000	g/t	oz 5,400	t 4 400 000	g/t	0Z	2 200 000	g/t	0Z	c coo ooo	g/t	0Z
	' '	92,000	1.8	5,400	4,100,000	1.6	220,000	2,300,000	1.3	96,000	6,600,000	1.5	320,000
	Morning Star	40.000	2.2	4 000	4,900,000	1.9	300,000	4,300,000	1.5	210,000	9,200,000	1.7	510,000
	Bartus Group	49,000	2.2	4,000	110,000	2.1	8,000	240,000	1.6	12,000	400,000	1.9	24,000
	Boomer				1,200,000	1.8	68,000	790,000	1.0	26,000	2,000,000	1.5	94,000
	Britannia Well				180,000	2.0	12,000	40,000	0.5	2.000	180,000	2.1	12,000
	Bullocks	450,000	0.0	40.000	200,000	3.3	21,000	40,000	2.5	3,000	240,000	3.1	24,000
	Eastern Jaspilite	150,000	2.2	10,000	120,000	2.8	11,000	130,000	2.5	11,000	400,000	2.5	32,000
	Eclipse				170,000	2.2	12,000	41,000	2.1	3,000	210,000	2.2	15,000
	Eridanus				2,800,000	1.3	120,000	690,000	1.1	23,000	3,500,000	1.3	150,000
<b></b>	Golden Stream				150,000	2.9	14,000	67,000	1.2	2,700	220,000	2.4	17,000
Mt Magnet	Lone Pine				490,000	1.3	21,000	390,000	1.7	21,000	870,000	1.5	42,000
	Milky Way				1,400,000	1.3	58,000	880,000	1.1	30,000	2,300,000	1.2	88,000
	O'Meara Group				180,000	2.5	14,000	230,000	1.7	12,000	410,000	2.0	27,000
	Spearmont-Galtee				25,000	2.9	2,000	210,000	4.3	28,000	230,000	4.0	30,000
	Stellar				380,000	2.1	26,000				380,000	2.1	26,000
	Welcome - Baxter	220,000	1.6	11,000	280,000	1.6	15,000	200,000	1.8	11,000	700,000	1.7	37,000
	Open Pit deposits	510,000	1.9	30,000	17,000,000	1.7	920,000	11,000,000	1.4	480,000	28,000,000	1.6	1,400,000
	Hill 50 Deeps	280,000	5.5	49,000	930,000	7.0	210,000	400,000	6.4	81,000	1,600,000	6.6	340,000
	Hill 60				200,000	4.4	28,000	160,000	4.3	22,000	360,000	4.3	50,000
	Morning Star Deeps				190,000	4.2	26,000	330,000	5.0	53,000	530,000	4.7	79,000
	Saturn UG							1,600,000	2.5	130,000	1,600,000	2.5	130,000
	Shannon				330,000	5.9	63,000	290,000	4.2	39,000	620,000	5.1	100,000
	UG deposits	280,000	5.5	49,000	1,700,000	6.1	330,000	2,800,000	3.6	320,000	4,700,000	4.6	700,000
	ROM & LG stocks	1,500,000	0.7	33,000							1,500,000	0.7	33,000
	Total Mt Magnet	2,300,000	1.5	110,000	18,000,000	2.1	1,200,000	13,000,000	1.9	810,000	34,000,000	2.0	2,200,000
	Edna May				21,000,000	0.9	580,000	5,100,000	0.8	130,000	26,000,000	0.9	720,000
	Edna May UG				310,000	6.9	70,000	12,000	6.7	2,700	330,000	6.9	73,000
Edna May	Greenfinch				2,700,000	1.1	94,000	1,700,000	1.1	60,000	4,400,000	1.1	150,000
	ROM & LG stocks	1,700,000	0.5	25,000							1,700,000	0.5	25,000
	Total Edna May	1,700,000	0.5	25,000	24,000,000	1.0	750,000	6,800,000	0.9	200,000	32,000,000	0.9	970,000
Vivien	Vivien UG	370,000	5.8	68,000	41,000	3.9	5,100	34,000	2.9	3,100	440,000	5.4	77,000
	Mossbecker				110,000	2.6	8,900	120,000	3.4	13,000	230,000	3.0	22,000
Kathleen	Yellow Aster				91,000	3.8	11,000	300,000	2.0	18,000	390,000	2.4	30,000
Valley	Nil Desperandum				23,000	5.8	4,400	100,000	2.9	9,500	120,000	3.5	14,000
	Total KV				220,000	3.4	24,000	520,000	2.5	41,000	750,000	2.7	66,000
Coogee	Coogee				31,000	3.6	3,600	65,000	3.3	7,000	96,000	3.4	11,000
WesternQueen	WQ South				100,000	3.6	12,000	81,000	3.4	8,800	180,000	3.5	21,000
Symes	Symes Find				400,000	1.9	24,000	150,000	2.1	10,000	540,000	1.9	34,000
	Dolly Pot				560,000	1.7	31,000	44,000	1.7	2,300	610,000	1.7	34,000
	Dugite				250,000	1.9	15,000				250,000	1.9	15,000
	Python				760,000	1.9	47,000	170,000	1.8	10,000	940,000	1.9	57,000
Marda	Goldstream				100,000	2.5	8,300	130,000	1.4	5,900	230,000	1.9	14,000
	Golden Orb				370,000	3.0	35,000	190,000	1.8	11,000	560,000	2.6	46,000
	King Brown				130,000	4.3	18,000	41,000	1.9	2,600	170,000	3.7	21,000
1	Die Hardy				1,100,000	1.6	54,000	450,000	1.5	21,000	1,500,000	1.6	75,000
	Red Legs				, ,-,		,	370,000	2.9	34,000	370,000	2.9	34,000
	Total Marda				3,200,000	2.0	210,000	1,400,000	2.0	87,000	4,600,000	2.0	300,000
Tampia	Tampia	390,000	2.4	31,000	7,700,000	1.7	420,000	130,000	1.8	7,400	8,200,000	1.7	460,000
	l Resource	4,700,000	1.6	240,000	54,000,000	1.6	2,700,000	22,000,000	1.6	1,200,000	81,000,000	1.6	4,100,000
I Ula		7,700,000	1.0	2-10,000	U-1,000,000	1.0	2,700,000	22,000,000	1.0	1,200,000	01,000,000	1.0	7, 100,000

Figures rounded to 2 significant figures. Rounding errors may occur.

#### **Mineral Resource Commentary**

Mt Magnet is comprised of numerous gold deposits contained within a contiguous tenement holding, located within an 8km radius of the processing facility. The Galaxy group includes the Saturn, Mars, Titan, Brown Hill and Vegas deposits. Current mining operations include the Milky Way, Eridanus, Stellar West & Vegas open pits, and the Hill 60 and Shannon underground mines. Vivien is a high grade quartz lode deposit, located near Leinster.

The Edna May mine was acquired in October 2017. It was re-modelled and reported in early 2018, following a significant underground and surface drilling campaign. It comprises of the large-scale Edna May stockwork deposit and the related, adjacent Greenfinch deposit. Two high grade quartz lodes are modelled within the broader Edna May deposit. Underground mining is in progress on high grade lodes and large low grade stockpiles are providing significant mill feed. All deposits have been depleted for mining during the 2019 financial year.

Acquisition of the Marda and Tampia projects has provided the main increase to Mineral Resources. Both are unmined ore deposits. Marda comprises a number of BIF hosted gold deposits, located 120km north of Southern Cross. Tampia is hosted within amphibolite facies mafic rocks 12km SE of Narembeen in the WA wheatbelt. Symes Find is located 120km SSE of Edna May, also in the WA wheatbelt and consists of lateritic and primary mineralisation hosted in mafic gneiss units similar to Tampia.

All resources are based on combinations of RC and diamond drill holes. Sampling has been via riffle or cone splitters (RC) or by sawn half core. Assay is carried out by commercial laboratories and accompanied by QAQC samples. A substantial proportion of drill data is historic in nature or gathered by previous owners, however Ramelius has added significant further drilling for all deposits, especially those forming Ore Reserves. Mineralisation has been modelled via cross-sectional interpretations using deposit appropriate lower cut-off grade shapes and geological interpretations. Geological understanding has formed the basis of all ore interpretations. Interpretations have then been wireframed using geological software, including Micromine, Leapfrog & Surpac. Mineralisation has been grouped by domain where required and statistical analysis, top-cutting and estimation carried out using anisotropic search ellipses. Estimation uses Ordinary Kriging and/or Inverse Distance methods. Modelling has been undertaken with recognition of the probable mining method and minimum mining widths and resource classifications reflect drill spacing, data quality, geological and grade continuity. Density information for fresh rock is generally well established and new measurements have frequently been obtained. Nearly all deposits listed, with the exceptions of Marda and Tampia, have had some degree of recent production or historic mining. Resources are reported using cut-offs approximating an A\$1,850/oz gold price.

Further details are available in prior RMS ASX Releases for individual projects. Additional detailed information relating to generation of the Resource estimates is attached below in Table C – JORC 2012 Reporting Criteria.

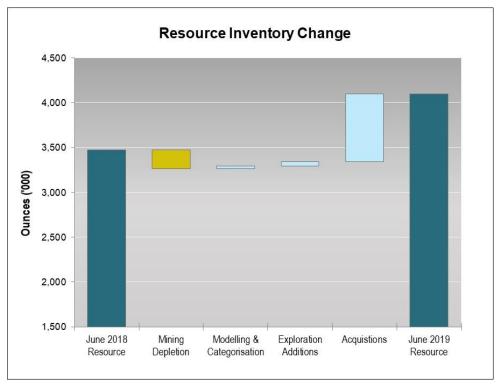


Figure 3: Resource Inventory Change

## **Mineral Resource Diagrams**

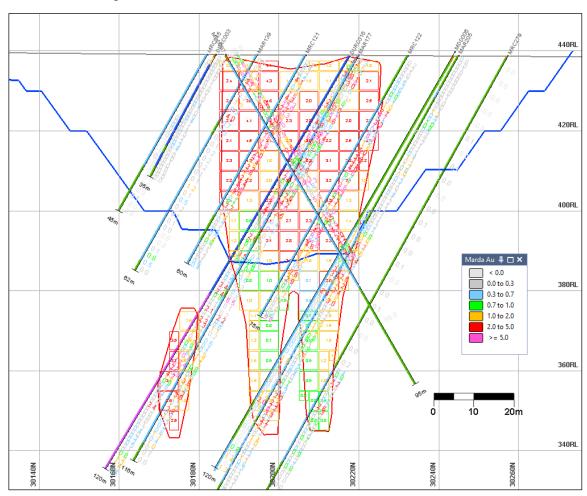


Figure 4: Dugite cross-section 10250E (local), drilling, resource model & pit design

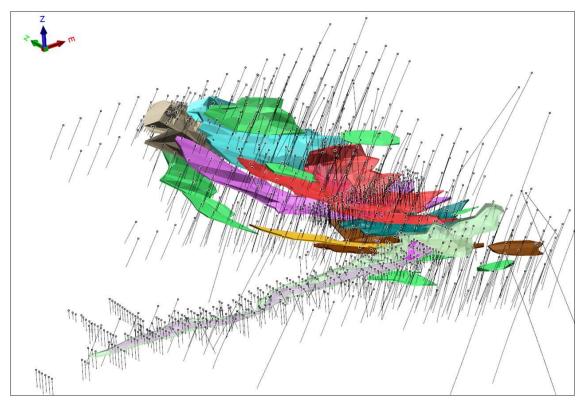


Figure 5: Tampia drilling, mineralised lodes and Mace paleochannel – oblique view to NE

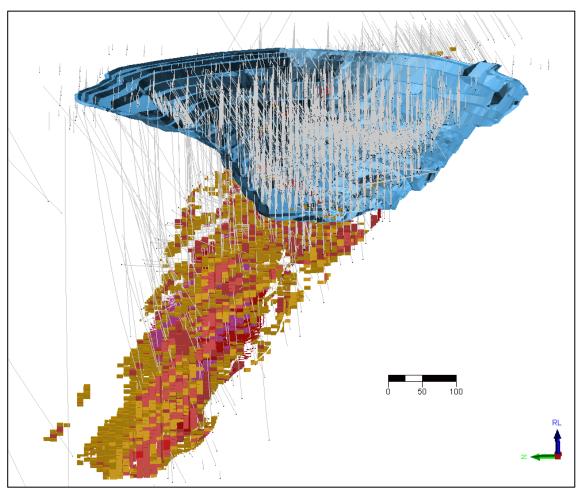


Figure 6: Edna May stockwork deposit, 3D truncated view to the east of open pit, block model & drilling

#### **ORE RESERVES**

Table B: Ore Reserves

		ORE	RESE	RVE STATE	EMENT AS AT	30 JUNE	2019			
Project	Mine	P	roven		Р	robable		Tota	l Reserv	е
Floject	IVIIIIE	t	g/t	0Z	t	g/t	0Z	t	g/t	0Z
	Boomer				130,000	2.9	12,000	130,000	2.9	12,000
	Brown Hill				620,000	1.6	31,000	620,000	1.6	31,000
	Eridanus				3,100,000	1.1	110,000	3,100,000	1.1	110,000
	Golden Stream				95,000	3.0	9,200	95,000	3.0	9,200
	Milky Way				200,000	1.2	7,800	200,000	1.2	7,800
	Morning Star				1,100,000	1.9	68,000	1,100,000	1.9	68,000
Mt Magnet	Stellar				170,000	2.7	15,000	170,000	2.7	15,000
	Vegas				180,000	1.3	7,500	180,000	1.3	7,500
	Total Open Pit				5,600,000	1.4	260,000	5,600,000	1.4	260,000
	Hill 60				240,000	3.2	25,000	240,000	3.2	25,000
	Shannon				290,000	5.1	48,000	290,000	5.1	48,000
	Total Underground				530,000	4.3	73,000	530,000	4.3	73,000
	ROM & LG stocks	1,500,000	0.7	33,000	-	-	-	1,500,000	0.7	33,000
	Mt Magnet Total	1,500,000	0.7	33,000	6,100,000	1.7	330,000	7,600,000	1.5	360,000
	Edna May UG				420,000	4.7	63,000	420,000	4.7	63,000
	Greenfinch				1,700,000	1.2	62,000	1,700,000	1.2	62,000
	ROM & LG stocks	1,700,000	0.5	25,000	=	-	-	1,700,000	0.5	25,000
	Edna May Total	1,700,000	0.5	25,000	2,100,000	1.9	130,000	3,700,000	1.3	150,000
Vivien	Vivien UG	220,000	6.2	44,000		-		220,000	6.2	44,000
	Dolly Pot				300,000	1.7	16,000	300,000	1.7	16,000
	Dugite				170,000	2.0	11,000	170,000	2.0	11,000
	Python				320,000	2.2	22,000	320,000	2.1	22,000
Marda	Goldstream				71,000	2.6	6,000	71,000	2.6	6,000
	Golden Orb East				64,000	4.2	8,600	64,000	4.2	8,600
	Golden Orb West				140,000	2.7	12,000	140,000	2.7	12,000
	King Brown				75,000	5.3	13,000	75,000	5.4	13,000
	Marda Total	-	-	-	1,100,000	2.5	89,000	1,100,000	2.5	89,000
Tampia	Tampia	170,000	3.7	20,000	2,000,000	2.7	180,000	2,200,000	2.8	200,000
To	otal Reserve	3,600,000	1.1	120,000	11,000,000	2.0	720,000	15,000,000	1.8	840,000

Figures rounded to 2 significant figures. Rounding errors may occur.

#### **Ore Reserve Commentary**

All Ore Reserves have been reported from Measured and Indicated Resources only. Current operational open pits are Milky Way, Vegas and Eridanus and these were depleted via mining to the end of June 2019. Current underground operations are the Vivien, Edna May, Shannon and Hill 60 mines which were also depleted. All Ore Reserves have been generated from a number of internal and external mining optimisations and open pit or underground design studies using appropriate cost, geotechnical, slope angle, stope span, dilution, cut-off grade and recovery parameters. Ore Reserves are utilised in the current Life of Mine plan. Mining approvals processes are in progress for the Greenfinch, Tampia and Marda open pits.

The Eridanus Ore Reserve is based on an open pit mine design and has been reported from Indicated Resource only. It has been calculated from several internal and external optimisation and design studies using appropriate cost,

geotechnical, slope design criteria, dilution, cut-off grade and recovery parameters. Ore Reserves are reported above 0.6g/t Au. The design pit totals 5.5Mbcm, is 450m long and reaches a maximum depth of 110m (refer Figure 10).

Ore Reserve gold prices as below (per oz), were used to generate appropriate cut-offs;

- Mt Magnet open pits reserves utilise a gold price of A\$1,650 and underground utilise a gold price of A\$1,800
- Edna May open pits reserves utilise a gold price of A\$1,650 and underground utilise a gold price of A\$1,800
- Vivien reserves utilise a gold price of A\$1,800
- Marda open pits reserves utilise a gold price of A\$1,700
- Tampia open pits reserves utilise a gold price of A\$1,800

Mining, milling and additional overhead costs are based on currently contracted and budgeted operating costs. Costs for Vivien underground mining and ore haulage are based on current contracted and budgeted rates. Mill recoveries for all ore types are well established. Mt Magnet and Edna May stockpiles consist of ROM stocks & low-grade stocks mined post 2012.

Further detailed information relating to generation of the Ore Reserve estimates is attached below in Table C - JORC 2012 Reporting Criteria.

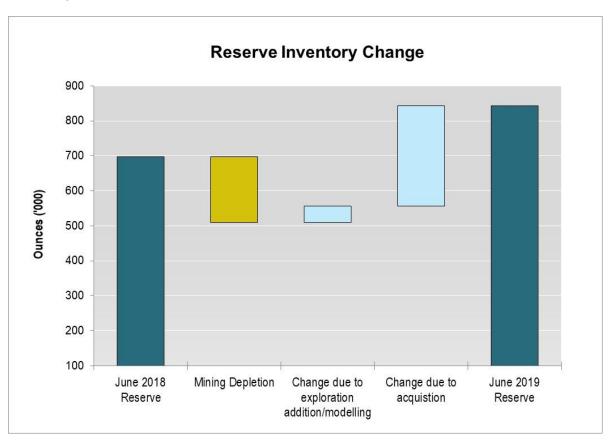


Figure 7: Reserve Inventory Change

## **Ore Reserve Diagrams**

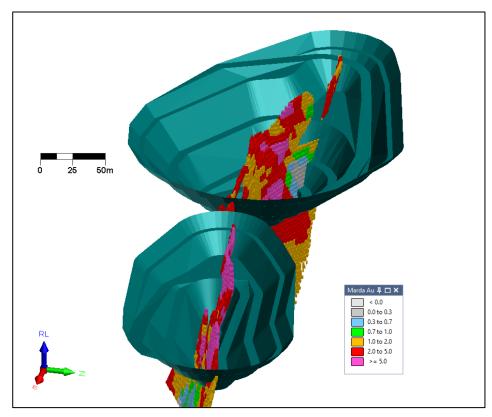


Figure 8: Golden Orb model & pit design, 3D view to the west

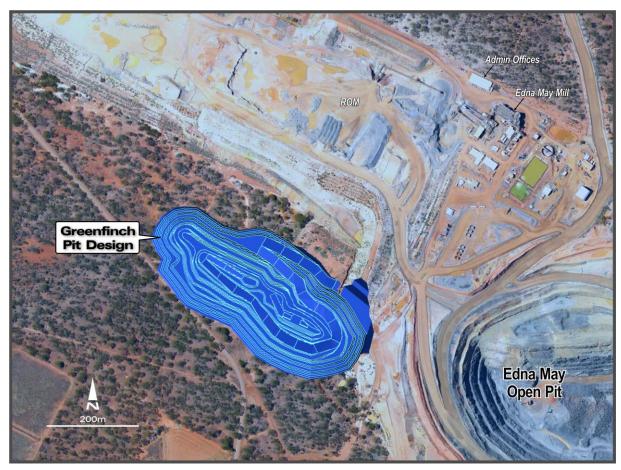


Figure 9: Greenfinch pit design, plan view

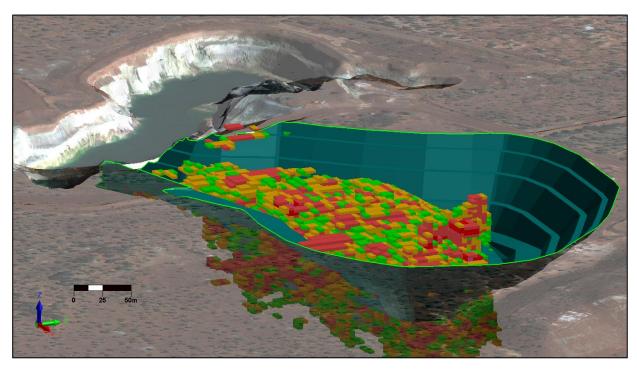


Figure 10: Eridanus model & pit design, view to the North



Figure 11: Eridanus open pit July 2019, view to the North

#### FORWARD LOOKING STATEMENTS

This report contains forward looking statements. The forward looking statements are based on current expectations, estimates, assumptions, forecasts and projections and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date such statements are made, but which may prove to be incorrect. The forward looking statements relate to future matters and are subject to various inherent risks and uncertainties. Many known and unknown factors could cause actual events or results to differ materially from the estimated or anticipated events or results expressed or implied by any forward looking statements. Such factors include, among others, changes in market conditions, future prices of gold and exchange rate movements, the actual results of production, development and/or exploration activities, variations in grade or recovery rates, plant and/or equipment failure and the possibility of cost overruns. Neither Ramelius, its related bodies corporate nor any of their directors, officers, employees, agents or contractors makes any representation or warranty (either express or implied) as to the accuracy, correctness, completeness, adequacy, reliability or likelihood of fulfilment of any forward looking statement, or any events or results expressed or implied in any forward looking statement, except to the extent required by law.

#### **COMPETENT PERSONS**

The information in this report that relates to Mineral Resources and Ore Reserves is based on information compiled by Rob Hutchison (Mineral Resources) and Duncan Coutts (Ore Reserves), who are Competent Persons and Members of The Australasian Institute of Mining and Metallurgy. Rob Hutchison and Duncan Coutts are full-time employees of the company. Rob Hutchison and Duncan Coutts have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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". Rob Hutchison and Duncan Coutts consent to the inclusion in this report of the matters based on their information in the form and context in which it appears.

Table C: JORC 2012 REPORTING CRITERIA

Section 1	Sampling Techniques and Data										
Project	Mt Magnet, includes Galaxy, Cosmos, Morning Star, Eridanus, Hill 60 and numerous smaller deposits. Galaxy consists of the Saturn, Mars, Titan, Brown Hill & Vegas. Cosmos consists of the Milky Way, Stellar, Stellar West & Shannon deposits.	Western Queen	Edna May, includes Edna May UG lodes & Greenfinch deposit	Tampia	Marda	Coogee	Vivien	Kathleen Valley			
Project History	Field discovered in 1891. Hill 50 UG mine operated 1934-1976 & 1981-2007. Recorded production of 6.0 Moz. Operated by numerous companies including WMC, Metana Minerals, Hill 50 Gold and Harmony Gold. Project acquired by Ramelius Resources Ltd (RMS) in 2010, with exploration, mining and milling recommencing early 2012. Ramelius gold production to 2019 is +500koz.	Historic underground production in 1936/37. Significant drilling and exploration by WMC in early 1990's. Western Queen (WQ) pit mined by Equigold 1998-2001. Western Queen South (WQS) mined by Harmony Gold in 2007. Mined by RMS 2013/14.	Discovered in 1911. UG mining of quartz reefs from 1911-47 producing 360koz. Modern mining commencing 1984 with Australian Consolidated Minerals, followed by Catalpa & Evolution. Total production over 1Moz. Acquired by Ramelius in 2017.	Discovered by BHP in 1987. Drilled by BHP and Nexus Minerals. Limited exploration until acquisition by Auzex Ltd in 2012. Company evolved into Explaurum Ltd and significant resource drilling conducted 2015-2018. Ramelius acquisition & drilling 2019.	Marda area discovered in late 1800's. Minor historical workings mainly a Dolly Pot deposit. Modern exploration by Chevron 1980's, Cyprus Gold 1990's, Savage Resources late 1990's and Southern Cross Goldfields/Black Oak Minerals from 2011-2014. Ramelius acquisition & drilling 2019.	Discovered in mid- 1990's. Majority of drilling by Sovereign Resources shortly after discovery in 1996, with lessor amounts by Harmony Gold (2002) and recently by Ramelius (2012). Mined by RMS 2013/2014.	Historic underground production in early 1900's. Early drilling by Asarco, Wiluna Mines and Australian Goldfields (AGFNL). Pit mined on 1997/98 by AGFNL. Major drilling by Agnew Gold Mining Company in 2000's. RMS acquisition & drilling 2013. Ramelius gold production to date is 150koz	Historic underground production in early 1900's at Yellow Aster (YA) and Nils Desperandum (ND). Explored by Newmont (1980's), Sir Samuel Mines/Jubilee Mines (1990's - 2000's) and Xstrata (2012). RMS acquisition & drilling in 2014. Ramelius gold production to 2015-2016 was 66koz.			
Sampling techniques	Sampling was completed using sub-sample collected via a riffle portion was laid out on the grout These were generally outside materials and the provide half core samples for an All sampling by conventional gointervals.  Sampling Technique details for or lacking for the majority of old which could affect sample reconsplit.	e or cone splitter. Tampia and for logging. Occasion nineralised areas, with ex- nalysis. Core outside lod old industry drilling metho historic drilling are often ler data or exists in harde	drilling used a Metzke all wet samples were not coeption of early Kathlee e or mineralised zones and as. Recent RC drilling by partial or unknown. At I copy formats which have	powered rotary splitter. And split but collected in a gen Valley holes. Diamon is not always sampled.  The samples could be sampled to the samples could be sampled to the samples could be supplied to the samples could be sampled to the samples could be supplied to the samples could be sampled to the sample	A split portion weighing 2 plastic bag then spear sid Drilling (DD) core was ollected to test sample reports exist referencing significantly investigated. Early RC	2-3kg was in collected in ampled. Some samples sampled as 1m or geole epresentivity. Tampia dr millar methods of sampledrill sampling (pre 1990)	numbered sample bags were collected as 2m or ogically selected interval illing had duplicate samp ing, however detailed inf 's) is likely to have used	s. The remaining Am composites. s. Core was sawn to ole collected for all formation is incomplete cross-over subs			

Drilling techniques	Recent (+2009): 860 RC and DD holes, with majority as RC using face sampling bit. Diamond drilling (DD) consists of NQ or HQ drill core. Most core not orientated. Old: Exploration/resource database contains 74,000 holes, with around 23,000 RC and 5,000 DD. Not all hole types recorded. Older RC holes may have used cross-over subs. Some RAB, AC or VAC holes may be included in shallow resource estimates (i.e. surficial laterites). Underground drilling includes some smaller core sizes such as BQ and grade control sludge holes.	Deeper resource drilling below current pit is largely diamond or RC precollared diamond tail holes. The non-GC drill dataset is over 200,000m. 227 holes are greater than 200m and maximum depth is 835m. Typically NQ core. Ramelius drilled 108 holes (100 DD) for 13,715m in 2017/18.			Resource defined by 140 RC holes and 2 DD holes. RC used face sampling bit. 15 RC and 2 HQ diamond core holes were drilled by RMS in 2012. Core not orientated. RAB and AC holes exist but are not used for estimation	Drillholes for resource comprise 70 RC and 158 DD holes. DD holes are NQ size and normally have RC precollars. ≈80% of drilling is post 2002 and deeper holes are mostly Diamond. Ramelius drilled 12 infill, geotechnical and exploratory DD holes (3 x HQ3, 7 x NQ2) in 2013. Ezymark Core orientation.	Drillholes for resources comprise 854 RC and 56 Diamond holes. DD drillholes include HQ and NQ core sizes. Core was not orientated. The majority of drilling was completed by Jubilee Mines in 1992-96. Xstrata drilled 73 RC and 30 DD holes in 2012. RMS drilled 28 RC holes in 2014.		
Drill sample recovery	Core recovery has been logged for more recent drilling intervals occur and can affect RC sample recovery. Edr filled stope voids.  Sample recovery at all deposits is generally excellent in samples or significant diamond drilling (Edna May). At 7	na May core recovery ex	cellent. Chip sample rec	overy is generally not loutlined reconstructions of sufficients.	egged. Voids relating to his	nistoric UG workings are  y to maximise recovery a	logged as open or and provide dry chip		
	No indication of sample bias is evident or has been esta					- Annual Chin to			
Logging	Recent drilling (+2009) has been logged for lithology, or precollars and holes. Older drilling generally has a minimum specifically for geotechnical purposes and the level of driving specifically for geotechnical purposes.	mum of lithology is logge	ed for +90% of holes, wit	h varying degrees of oth	ner information. All proje	cts have a number of ho	eles drilled and logged		
Logging	Drillhole logging of RC chips & DD core is qualitative or projects.	visual recordings of roc	k forming minerals & es	timates of mineral abund	dance. Photography exis	sts for recent (+2002) DI	O core from all		
	The entire length of drillholes are geologically logged								
	Core holes are sawn and sampled as half core. Some 1 been hand split in some instances						•		
	Recent RC holes were sub-sampled by rig mounted co- collected in plastic bags and manually riffle split. Occas	ional wet samples spear	sampled from plastic ba	ags.	of old drilling details unk	nown. Kathleen Valley	(KV) 90's drilling		
Sub-sampling techniques	Sub-sample methods appear appropriate for deposit an								
and sample preparation	Recent RC samples have field duplicate samples taken methods, however detailed information is incomplete or	lacking for the majority	of older data or exists in	hardcopy formats which	n have not been systema	atically investigated.	•		
	All recent samples sub-sampled using accepted splitting techniques and have been delivered to laboratory for total preparation by crushing and pulverisation, before being sub-sampled for analysis.  At Tampia significant numbers of mineralised duplicate samples were selected based on Arsenic grade (by handheld pXRF analysis) and submitted. Analysis of duplicates shows good correlation.								
	Sample sizes are generally appropriate for grain size ar less representative than larger RC samples.	nd material types being s	sampled, although nugge	ety gold exists at Edna N	May & Kathleen Valley a	nd smaller samples, i.e.	half NQ core, may be		

	Recent assaying (+2002) has a been used for 2013 vein sample typically by Aqua regia 25g, but	es at Vivien. Earlier assa	aying includes a numbe	r of techniques and labo	ratories and details are	often incomplete or unkr	own. 1990's assays at	Kathleen Valley were			
Quality of assay data and laboratory	No field analyses of gold grades analysis of Arsenic and was con	s are completed. Quant inducted in the field as a	titative analysis of the go 1st pass indication of m	old content and trace elenineralised zones. Final	ments is undertaken in Arsenic grade is genera	a controlled laboratory e ted by laboratory analysi	nvironment. At Tampia s.	handheld pXRF			
tests	Recent assaying (+2002) has h shows acceptable levels of accidence of old data. 1990's Kathleen Valout and compared.	uracy and precision. For	r older data reports and	tables exist, referencing	similar QAQC methods	, however detailed inform	nation is incomplete or	lacking for the majority			
	The Competent person has veri	ified significant intersect	tions of recent drilling du	iring the resource model	ling process						
Verification of	In most projects holes were not recently as a check of older drill earlier Resource drilling.										
sampling and assaying	Recent (+2002) data was captu validated prior to resource mod available and checks have been	elling. For old data deta	iled information for verif	ication of sampling and a							
	No adjustment of assay data										
Location of	Recent (+2002) collars have be survey tools. Old: Collar survey frequently planned to a pegged Valley. If present, downhole sur	method is not always re survey grid and drilled of	ecorded for all old holes on the grid to +/- 1-2m a	, however at Mt Magnet occuracy. Downhole surv	and Vivien mine site sur eys not available for all	rveyors were available a older drilling, notably vei	nd used. At Kathleen V rtical RC drilling at Coo	alley older holes were			
data points	All new drilling post 2009 uses I grid or AMG grids and then tran				deposits, unless they a	are parallel to MGA grid.	Older holes may have	been surevyed in local			
	Quality topographic surfaces ha	ave been generated mor	e recently from aerial pl	notogrammetry or detaile	ed surveys. Some older	drillhole RL data has be	en adjusted to match a	ccurate topography			
Data spacing and distribution	The majority of Mt Magnet deposits are drilled on a 25m based sections and frequently closed to 12.5m. On section spacing is generally 20-50m, with spacing generally closer near surface and wider at depth. Some deposits are drilled on 20m section spacings.	Resource holes on 25m sections with variable 10-50m on section spacing.	Resource holes on 25m sections with variable 10-50m on section spacing. Density decreasing at depth.	Dominant resource pattern of 40m x 40m. Ramelius has added selected infill drilling on 20m infill sections on variable 20-50m spacings. 6 lines of 10m x 10m infill RC were included in the central south area.	Marda Central 12.5 sections x 12.5m, Golden Orb 20m sections x 8-20m, King Brown 12.5 sections x 6-10m, Die Hardy 80m sections x 10-20m, Red Legs 100m sections x 10-20m.	Majority of drilling is 25m section by 10m on section spacing, with some infill to 5m on lines in core high grade zones and/or selected 12.5m sections.	Drilling pattern generally on 25m sections and 10- 30m eastings.	Drilling pattern generally on 25m sections and 10- 20m eastings and frequently closer.			
	Drill spacing is sufficient to esta	blish appropriate contin	uity and the classification	ns applied.	1		1				
	RC: Vast majority of samples at 1m lengths for resource calcula		m composites, generally	/ outside mineralised are	eas. Diamond: 1m samp	les or geologically define	ed 0.3 - 1.5m samples.	All data composited to			

Orientation of data in relation to geological structure	Orientation of geological structure and deposit geometry is varied at Mt Magnet. Intercept angles are usually orthogonal or highangle to stratigraphy and vary to suit individual deposits. Mineralisation is frequently complex with structurally controlled stratigraphic and cross-cutting sub-vertical trends. Drillhole dip angles are generally at a moderate to high angle to steeply dipping stratigraphy and mineralisation.	Drillholes are orientated orthogonal to the geological and mineralised trend. Intercept angles are moderate to high angle. Typically as -60° east dipping holes drilling a steeply -80° west dipping lode zone.	Drillholes are orientated orthogonal to the geological and mineralised trend. Intercept angles are moderate to high angle. Typically as -60° south dipping holes drilling a steeply -80° west dipping gneiss unit. High grade quartz reefs have been targeted with orthogonal UG diamond holes	Drillholes are orientated orthogonal to the geological and mineralised trend. Intercept angles are mostly at a high angle and often >85°. Typically as -60° northwest dipping holes drilling shallow 30° east dipping lode zones.	The core drilling and RC drilling is completed orthogonal to the interpreted strike of the deposits. A number of scissor holes exist at most deposits. Marda ore zones are generally vertical.	Drillholes are orientated orthogonal to the geological and mineralised trend. Intercept angles are at a high angle and close to true width. Most holes are vertical drilling a shallow -30° west dipping lode zone. New RMS drilling is -60° to the east.	Drillholes are orientated orthogonal to the geological and mineralised trend. Intercept angles are at a moderate to high angle to the lode. Typically as -60° NW dipping holes drilling a -75° SE dipping lode zone.	Drillholes are orientated orthogonal to the geological and mineralised trend. Intercept angles are at a high angle to the lode. Typically as -60° E dipping or vertical holes drilling a flat to shallow W dipping lode zone.
Sample security	Recent: All samples have been against the sample dispatch do				aboratory by commercia	ll transport companies.	The laboratory receipts r	eceived samples
Audits or reviews	No external audits or reviews of	f sampling techniques ar	nd data collection have l	been undertaken.				

Section 2	Reporting of Exploration	Results						
Mineral tenement and land tenure status	Mt Magnet resources and reserves fall within the contiguous Mt Magnet tenement group. Total of 62 Mining Leases and 6 Prospecting leases 100% owned by Mt Magnet Gold Pty Ltd, a wholly owned subsidiary of RMS.	WQS falls within M59/208 owned 100% by Mt Magnet Gold Pty Ltd	Edna May falls within M77/88 owned 100% by Edna May Operations Pty Ltd.	The Tampia deposit is located on M70/815 &816 90% owned by Ramelius.	Marda ore deposits are located on 100% owned Mining Leases.	Coogee falls within M26/477 owned 100% Ramelius Resources Ltd	Vivien falls within M36/34 owned 100% Ramelius Resources Ltd	Kathleen Valley mineral resources fall within M36/375 owned 100% Ramelius Resources Ltd
	Operating mine site. No known impediments.	Recently operating mine site. No known impediments.	Operating mine site. No known impediments.	Leases are on Freehold land. Mining access deal to be completed.	Previous 2014 mine plan was granted a Mining Approval & Clearing Permit.	Recently operating mine site. No known impediments.	Operating minesite as of May 2015.	Recently operating mine site. No known impediments.
Exploration done by other parties	In all deposits a large proportio Queen South - WMC, Equigold Newmont, Sir Samuel Mines/Ju geological interpretation, soil sa	l, Harmony Gold. Coogee ubilee Mines and Xstrata	e - Sovereign Gold, Harr . Edna May - Westonia I	mony Gold. Vivien - Asa Mines, ACM. Tampia - B	rco, Wiluna Mines, Austr HP, Nexus, Explaurum.	ralian Goldfields and Ag	new Gold Mining Compa	any. Kathleen Valley -

Geology	Archaean gold mineralisation. Mineralisation is principally hosted within Banded Iron Formations (BIF) where gold is spatially associated with NE trending faults and associated with pyrrhotite or pyrite mineralisation. Additionally gold is commonly found in late stage felsic intrusives or structurally controlled zones which cross- cut stratigraphy on NE trend. Interpretation for Mt Magnet resources is based on a long- history of exploration, open- pit and underground mining. Numerous geological interpretations, pit fact maps and reports exist & almost all resources (except Eridanus) have been previously mined	Archaean gold mineralisation. The WQ, WQ central and WQ south zones are hosted by steeply dipping mafic - ultramafic greenstone stratigraphy. Mineralisation occurs as within a steeply dipping, NNW trending foliated mafic lode/shear zone displaying silica veining and alteration and disseminated pyrite. The lode sits adjacent to an ultramafic contact.	Hosted by the Edna May Gneiss, a metamorphosed granitoid with strike length of 1km, width of 140m and depth extent of 700m and bounded by a maficultramafic stratigraphy. Mineralisation relates to widespread quartz veining, which occurs as thin sheeted foliation parallel or larger cross-cutting reef veins with a polymetallic sulphide assemblage. Mineralisation forms a broad low-grade stockwork throughout the gneiss. Greenfinch deposit very similar.	Tampia is hosted within Archaean mafic-felsic granulite facies units. Gold mineralisation is hosted within a mafic gneiss unit dominated by pyroxene-plagioclase - amphibole minerals. Late granitic sills intrude the mafic gneiss. Gold mineralisation occurs as shallow dipping (20°-30°), 2-20m thick lode zones sub-parallel to the granitic sills. Gold mineralisation of associated with disseminated pyrrhotite, arsenopyrite, chalcopyrite and rare pyrite.	Mineralisation is likely controlled by shear zones/fault zones passing through competent BIF rock units, hosted with mafic/ultramafic stratigraphy. Gold is associated with pyrite alteration in brecciated BIF, +/-quartz. Deep weathering has likely generated supergene enhancement of gold at shallow to moderate depths.	Coogee is hosted by a felsic dacitic and rhyolitic units. Mineralisation is hosted within a shallow (-30°) west dipping lode/shear zone. Pit exposures show the lode zone to be associated with sericite-chlorite alteration, coarse pyrite-hematite mineralisation and foliation. It is interpreted as a Archaean structurally hosted lode gold deposit possibly occurring on a sedimentary layer within the volcanic sequence.	Vivien is a typical orogenic structurally controlled Archaean gold lode system. It is a steeply dipping narrow quartz vein hosted within a dolerite/gabbro unit. It has strong geological continuity and is well understood from diamond drill core and historic mining and investigation. Mineralisation is related to a secondary phase of quartz veining with associated sulphide mineralisation.	Kathleen Valley deposits are orogenic structurally controlled Archaean gold lode systems. The mineralisation is controlled by a W dipping N/S trending fault contact between the Jones Creek Conglomerate and underlying ultramafic rocks. Gold occurs in flat lying silica-biotite-pyrite altered lodes hosted by the Conglomerate just above the fault contact. The Mossbecker deposit, for example, extends over 350m strike and consists of 1 - 2 main subhorizontal lodes.
Drill hole	This report relates to resources reported.		existing drillhole datase	ts. No new exploration re		•	-	
information	This report relates to resources reported.	and reserves based on	existing drillhole datase	ts. No new exploration re	esults are reported. All p	revious RMS significant	new drilling results have	e been previously
Data	No exploration results are report and whether open pit or underg	round mining scenario.	Topcuts not generally ap	oplied to drill intercept re	porting.		aries from 0.5 to 2 g/t ba	sed on deposit style
aggregation methods	Weighted averages are applied	to determine the grade	of the anomalous interva	al when irregular sample	intervals have been us	ed.		
	No metal equivalents, gold only							
Relationship between mineralisation widths and intercept lengths	This report relates to resources	and reserves based on	existing drillhole datase	ts. No new exploration re	esults are reported. Tru	e width or relationship g	enerally reported where	known.
Diagrams	Appropriate plans and section a	are reported with previou	s RMS drilling result rele	eases. Appropriate exan	nple resource/reserve pi	ctures are presented ab	ove.	

Balanced reporting	This report relates to resources and reserves based on existing drillhole datasets. No new exploration results are reported. All previous RMS significant new drilling results have been previously reported. Generally all holes are reported.
Other substantive exploration data	All deposits have had some degree of additional sampling or testwork in regard to geotechnical investigation, geochemical characterisation, metallurgical testwork and density measurement, usually on specific selected diamond core holes. Other exploration data is useful in understanding geology and mineralisation types but is generally not material to resource estimation.
Further work	Further work will consists of ongoing infill or extensional drilling on material projects likely to convert to reserves and extend mine life.  Further work mainly comprises of further drilling programmes. No details or diagrams are attached for this announcement.

Section 3	Estimation and Reporting of Mineral Resources
Database integrity	Recent (+2002): Ramelius employs an SQL central database using Datashed information management software. User access to the database is regulated by specific user permissions. Only specific users can overwrite data. Data collection uses Field Marshall software with fixed templates and lookup tables for collecting field data electronically. A number of validation checks occur upon data upload to the main database. Recent data from Edna May (Evolution), Vivien (AGMC), Kathleen Valley (Xstrata) & Tampia (Explaurum) has employed similar measures. Old: The majority of data has been inherited as SQL or access databases and integrity measures is largely unknown. Numerous old resource reports list previous validation exercises, however new checks have not been systematically undertaken.
	Validation checks include electronic checks for missing assays and geology intervals, overlapping intervals, duplicate assays, EOH depth, hole collar elevations and assay value detection limits, negative and zero values. Some historic data, notably Kathleen Valley, has been checked against hardcopy logs and assay reports and errors corrected.
Site visits	The Competent Person is a full time employee of Ramelius Resources Ltd and has made multiple site visits to all deposits. Visits confirmed understanding of deposits and datasets
	Confidence in the geological interpretation of the deposits is high. Most deposits have had a significant history of exploration and recent mining. No mining has occurred at Tampia and Marda. Geological interpretations have been formulated over many years and multiple drilling campaigns.
	Data used includes drilling assays & logging from a number of generations of drilling. Numerous geological interpretations, pit or underground maps and reports exist and most resources have been previously mined to some degree. Drillhole geological logging and mapping data is primary information used to interpret geological and fault wireframes.
Geological	No alternate interpretations have been considered necessary
interpretation	Geology forms the base component of all interpretations. At Mt Magnet mineralisation is principally hosted within Banded Iron Formations (BIF) where gold is spatially associated with NE trending faults and associated with pyrrhotite and pyrite mineralisation. Additionally gold is commonly found in late stage felsic intrusives which cross-cut stratigraphy in NE trend. For resource modelling the geology has generally been interpreted first followed by a separate interpretation of mineralisation envelopes. At Vivien mineralisation is hosted by a steeply dipping quartz vein within a dolerite host unit and strongly associated with sulphide mineralisation within the vein. At Edna May is a large scale vein stockwork within an altered metamorphosed granitoid, with a number of higher grade quartz 'reefs'. Tampia mineralisation is hosted in a mafic gneiss and occurs in shallow dipping lode/shear zones sub-parallel to the banding and granitic sills.
	Continuity is affected by geological extents and mineralisation as currently defined by drilling

Dimensions	Numerous variations. Examples: current Saturn pit cutback being mined is 700m long, 350m wide & 190m deep. Main Saturn BIF hosted orezone strikes length of pit, is 5-30m wide, subvertical and currently drilled to 350m vertical depth. Higher grade zones typically occurring as vertical shoots in BIFs. Minimum width in resource interpretations generally 3-4m, example Golden Stream narrow sub-vertical BIF hosted resource over 270m strike length, drilled to 90m down-dip.	Lenticular NNW striking and steeply west dipping (-70°) lode with width of 5-15m. Strike length of 350m. Drilled down dip extent of 160m and higher grade core zone plunging -40° to S. Occurs from 40 to 300m below surface.	Edna May gneiss unit is a lenticular body, typically 50-150m thick, 1000m long and defined down-dip to 700m. It strikes east-west and dips N at 50-60°. Quartz reefs strike N-NE and dip 45-50 W.	The deposit has a strike of 1000m, down-dip width of around 400m and depth extent of around 150m. The mafic gneiss, granite sills and mineralised lodes have a shallow SE dipping, gently folded orientation forming a 'bowl' shaped geometry.	Lode and shear hosted styles. Strikes range from 140m (Dugite) to 450m (Golden Orb) and dip at 70-90°. Average lode width approximately 10m, mostly ranging between 2- 20m. Down-dip extents typically 50-75m.	Shallow dipping (-30°) tabular lode, 3-6m thick. Strike extent of 230m, drilled down dip extent up to 130m. Occurs 25-100m below surface. Smaller flat lying supergene zone, 2-5m thick sits above lode at base of complete oxidation (25-30m depth).	Narrow vein/lode style. Strikes NNE and dips at 70° to ESE. Average width approximately 2.7m, ranging between 1- 7m. Established strike length of 600m and down dip extent of 400m.	The Mossbecker deposit extends over 350m strike (to N).Gold mineralisation occurs in shallow dipping lodes 2-10m thick and 40m wide and plunges around 15° to the southwest. Lodes occur from 0-100m depth. The other deposits are of similar dimensions and geometry.
Estimation and modelling techniques	3D mineralisation wireframes are interpreted in Micromine. Often multiple domains were generated to reflect geological host, mineralisation style or local spatial trends and hard bound assay information at a nominal 0.5g/t (open-pit) cutoff. Estimation by anisotropic Ordinary Kriging or ID methods using 1m composited assay data in parent cells only. Topcuts applied by domain determined by review of population stats. All resources except Water Tank Hill have previous versions to compare. Models were validated visually against assay data. Reports exist for all models to varying degrees of detail.	Three dimensional mineralisation wireframes interpreted in Micromine. One primary and 2 minor lode domains were generated to hard bound assay information at a nominal 1g/t cutoff. Estimation by anisotropic Ordinary Kriging and comparison ID³ methods using 1m composited assay data in parent cells only. Appropriate topcuts applied by domain determined by population stats.	The Edna May Gneiss unit forms the main mineralised domain and grades were generated within it using anisotropic Ordinary Kriging. Population statistics were reviewed and appropriate topcuts and parameters applied. Quartz reefs were constrained within interpreted lode shapes and estimated separately.	Three dimensional mineralisation wireframes interpreted in Micromine. Lode domains interpreted based on 0.2-0.5g/t cutoff and or/+400ppm As. A minimum thickness of 2-3m is used. Multiple lode domains were generated reflecting the different lodes and grades. Two internal high-grade sub domains where interpreted to control zones of notably higher grade. Grade within the domain is estimated using Inverse Distance¹ within the domains. Ordinary Kriging grades were generated and compared.	Three dimensional mineralisation wireframes interpreted in Micromine. Lode domains interpreted based on 0.6-0.8g/t cutoff. Hard bounded grade estimation by Inverse Distance method using 1m composited topcut assay data to parent cells only. Anisotropic search ellipse based on interpretation of continuity.	Three dimensional mineralisation wireframes interpreted in Micromine software. One primary and one supergene domain were generated to hard bound assay information at a nominal 1g/t cutoff. Estimation by anisotropic ID³ method using 1m composited topcut assay data in parent cells only.	Three dimensional mineralisation wireframe interpreted in Micromine. Single lode domain interpreted based on quartz vein position, with minimum 1.5m downhole width. Grade estimation by Ordinary Kriging method using 1m composited topcut assay data to parent cells only. Anisotropic search ellipse using strike and dip and with NE plunge used reflecting previous interpretations and variography.	Three dimensional mineralisation wireframes interpreted in Micromine. Lode domains interpreted based on 0.5g/t cutoff. Hard bounded grade estimation by Inverse Distance & Ordinary Kriging method using 1m composited topcut assay data to parent cells only. Anisotropic search ellipse based on domain variography.

	No by-products								
	No non-gold elements of signific	cance. Low sulphur or s	ulphur directly related to	ore grade material. Ars	enic grade is estimated	at Tampia and used in tl	he calculation of mill reco	overies.	
	Galaxy block size 4m(X) x 10m(Y) x 5m(Z) with subcells. Parent cell estimation only. Other deposits similar sizes. Anisotropic search - maximum range 120m	Block size 4m(X) x 10m(Y) x 5m(Z) with subcells. Parent cell estimation only. Anisotropic search - maximum range 100m	Block size 10m(X) x 5m(Y) x 5m(Z) with subcells. Parent cell estimation only. Anisotropic search - maximum range 100m	Block size 5mE x 10mN x 5mRL with sub-cells to minimum of 1mE x 2mN x 1mRL. Parent cell estimation only. Anisotropic search - maximum range 100m	Block size 10mE x 5mN x 5mRL with sub-cells to minimum of 2mE x 1mN x 2.5mRL. Parent cell estimation only. Anisotropic search - maximum range 75m	Block size 5m(X) x 12.5m(Y) x 2.5m(Z) with subcells. Parent cell estimation only. Anisotropic search - maximum range 50m	Block size 5m(X) x 12.5m(Y) x 10m(Z) with subcells. Parent cell estimation only. Anisotropic search - maximum range 65m	Block size 5m(X) x 10m(Y) x 5m(Z) with subcells. Parent cell estimation only. Anisotropic search - maximum range 50m	
	Parent block size is generally a	ssumed to match SMU s	size.			•			
	Grades assumed to correlate a	long mineralised trends/	wireframes and estimate	ed using anisotropic sea	rches matching correlat	ion directions			
	Mineralisation wireframes were	constructed with referen	nce to geological/minera	lisation interpretations					
	All gold deposits with lognorma			·					
	Validation has generally include	ed visual comparison aga	ainst drillhole grades, vo	olume comparisons, glob	al grade statistic compa	arison and swath grade p	olots		
Moisture	All tonnages are estimated on a	<u> </u>							
Cut-off parameters	Cut-off grades are adopted to b zones. For most deposits interp the mineralised zone where gol geology, nugget effect and mine	oretation cutoff is typically d grades are frequently	y in the 0.5 to 0.7g/t ran nuggety. These cutoffs	ge. Tampia interpretation encapsulate the minera	n cutoffs range around ( lisation effectively and t	0.2-0.5 g/t Au and 200-4	00ppm As. Arsenic is an	important indicator of	
Mining factors	Galaxy, Cosmos, Eridanus, Mo economic cutoffs based on curr consideration of extraction by c low grade model for open pit ev	ent contract mining equi onventional sub-level op	pment and milling facilit en stoping methods. Th	ies. Mt Magnet UG depo ne Saturn UG resource a	sits, including Hill 60, S	hannon, Vivien and Edn	a May lodes are current	ly modelled with	
Metallurgical factors	Metallurgical treatment is based (Westonia), a 2.8Mtpa CIL gold high total recoveries (≈94%). Vi variable and appears to relate t	plant. Mt Magnet depos vien is processed at Mt	its are currently or have Magnet with recoveries	recently been processe of around 97%. For Tam	d with recoveries aroun pia number of historic a	d 91-94%. Edna May ha and recent metallurgical	is significant gravity reco tests have been carried	overies (≈50%) and out. Recovery is	
Environmental factors	All sites are now operating or recently operating mine sites (except Marda & Tampia) and compliant with all legal and regulatory requirements. No significant environmental issues are envisaged.  Approvals processes are underway for a number of projects. The Greenfinch open pit project is within a PEC/TEC area. An initial Clearing permit was not approved. A second reduced footprint Clearing permit is being assessed.								
Bulk density	All deposits have a number of c enough to give representative a density measurement.								
24 33110109	Density measurements are ava mining and CP experience.	ilable for fresh core, but	fewer measurements ex	xist for oxidised or transi	tional materials. Oxidise	ed densities used can inc	clude assumed values ba	ased on previous	

	All resources have dry densities assigned by geologically interpreted weathering horizon, plus rocktype where appropriate. At Vivien a variable density calculation is applied to fresh quartz lode based on ore grade. This fits with measured densities and the correlation between sulphide content with gold grade.
	It is assumed the deposit densities can be represented by the average values determined or estimated by rocktype and oxidation type.
	Mineral Resources have been classified into Measured, Indicated and Inferred categories based on drillhole spacing, geological confidence, information quality and grade continuity. Only a small proportion of resources have been classed as Measured and generally occur in areas of high drilling density where grade control data is available.
Classification	Appropriate account has been taken of all factors
	The classification reflects the Competent Person's view
Audits or reviews	The Galaxy, Milky Way, WQS, Edna May, Coogee and Vivien mineral resource estimates have been reviewed by an external geological consultant. While a number of minor changes and enhancements were recommended, no significant flaws to the resource models were found. Historic drilling data information quality was not reviewed. Other Mt Magnet resources have not been externally reviewed. For Tampia a resource geological consultant was used to generate alternative slightly earlier versions of the resource and several methodologies were adopted from this work. This also gave a model for comparison.
Discussion of relative accuracy /confidence	All deposits have a number of previous resource estimates for comparison. Much of the drilling data used however is historic (exceptions Eridanus & Tampia) and methodology detail and quality assurance information is not always complete or in hardcopy records which have not been systematically investigated. Hence the bulk of resources have been assigned an indicated or inferred status. At the Mt Magnet deposits: Perseverance, Morning Star, St George, Mars and at Vivien and Kathleen Valley some underground mining voids exist and surrounding remnant resources if existing are given a maximum of Indicated status. Confidence levels are reflected by the classifications applied and reported.
	The estimates are global estimates
	Many of the resources have current production data to compare, including, Milky Way, Stellar, Stellar West, Water Tank Hill, Vivien and Edna May and reconcile within 10% of estimates.

Section 4	Estimation and Reporting of Ore Reserves							
Mineral Resource estimate for conversion to Ore Reserves	Mt Magnet ore reserves are based on revised resource estimates generated by RMS in 2012 - 2019	WQS - no ore reserve	Edna May ore reserve is based on Ramelius 2018 resource model. Greenfinch is based on Ramelius 2017 resource model	Tampia ore reserve is based on Ramelius 2019 resource model	Marda ore reserve is based on Ramelius 2019 resource models	Coogee - no ore reserve	Vivien ore reserve is based on the 2018 Grade Control model and the Ramelius 2020 Budget	Kathleen Valley - no ore reserve
	Mineral Resources are reported inclusive of Ore Reserves							
Site visits	The Competent Person is a full time employee of Ramelius Resources Ltd and has made multiple site visits. Visits have confirmed understanding of reserve work.							
	At Mt Magnet, Edna May and Vivien reserves are based on budgeted production, life of mine planning, feasibility and pre-feasibility studies conducted with the last 1 to 4 years.							
Study status	Ore Reserves have been generated after studies appropriate to the deposit type, mining method and scale and are considered to be at least Pre-Feasibility level. Mining studies have been carri out both internally and using external consultants with appropriate geotechnical, hydrological, equipment, metallurgical and mining method information. Costs have been used from current budge mining, milling and administration costs. Environmental, social and other factors have been considered internally.							
Cut-off Parameters	Mt Magnet - open pits cut-off 0.6-0.7 g/t, selective UG cut-off 3.5g/t, bulk UG cut-off grade 2.0 g/t. Vivien UG cut-off 3.5g/t. Edna May Stage 2 pit cutoff 0.5 g/t. Greenfinch open pit cutoff 0.6 g/t. Edna May UG cutoff 2.1 g/t. Marda pits cut off 1.0 g/t. Tampia cut off 0.9g/t.							

Mining factors or assumptions	Models have been created with a parent block size to reflect likely SMU block size and mining resolution prior to optimisation and design work to generate ore reserves. Some models, i.e. Eridanus and Tampia have had blocks regularised to generate an appropriate SMU size. For Vivien the resource model is used as is with planned development and stoping design given planned and unplanned dilution factors.
	Appropriate mining methods are used. Open pit mining methods for Mt Magnet, Tampia, Marda & Edna May open pit resources using current design, mining equipment and cost parameters. Selective open stoping underground methods are used for Mt Magnet & Edna May underground reserves, except for Saturn UG which assumes bulk UG mining methods. For Vivien a conventional, narrow, top-down, long hole stoping method is used.
	Geotechnical parameters are derived from current mining practises and regular inspection & reporting by geotechnical consultants for all operating mines. All new projects have a number of geotechnical drillholes and assessments generated. Grade control processes are well established and generally consist of RC drilling within pits or face sample grade control and drilling in undergrounds.
	Dilution factors are used for all pits and range between 2 - 10% based on deposit style, orientation and mining method. At Vivien 20% dilution (0 g/t) is used if stopes between 1.5 and 2m and 10% dilution if wider than 2m. For Edna May UG dilutions of 27-31% are applied. Marda used 7%. Tampia model was regularised and an extra 2% dilution applied.
	Open pits mining recoveries range between 90-98%. At Vivien mining recovery was 95% with 5% left as island rib pillars. At Edna May UG 85% mining recovery was used. Marda used 95%. Tampia used 96%.
	Generally a minimum width of around 3m is assumed for open pit and 1.5-2m for underground with increased dilutions for narrow widths.
	Inferred mineral resources for pits have been tested in optimisations but are not included in Ore Reserves or final pit economic evaluations. The project viability is not dependent on the inferred resource.
	Milling will use Checkers mill at Mt Magnet and Edna May mill, conventional gravity recovery and CIL processing circuits. Significant milling information historical and current is available for all deposits.
	Process is proven technology
Metallurgical	Significant milling information, historical and current, is available for all deposits. Long term mill recoveries are generally around 92-94% for Mt Magnet and 93-94% for Edna May.
factors or assumptions	No deleterious elements present
	No bulk samples or bulk sample requirement
	No specifications, gold
Environmental	Environmental studies including waste rock characterisation studies from drill samples, flora and fauna and hydrological surveys have been carried out for all projects. Mining Approvals are currently granted for the Mt Magnet & Edna May pits. Mining Approvals are underway for new projects including the Marda and Greenfinch pits. Greenfinch pit is within a PEC/TEC and requires additional Environmental Approvals.
Infrastructure	Current site infrastructure is in place and suitable for current and planned mining and milling operations. At Mt Magnet it includes accommodation camp, Checkers mill and tailings dams, offices, magazines, roads and gas power station. At Edna May it includes mill, tailings dams, offices, magazines, roads. Power is on state grid. At Vivien infrastructure requirements are relatively small, comprising offices, workshop, generators, underground fan, dewatering pumps, pipeline and magazine. Site access roads largely exist. Accommodation will utilise existing camps at Mt Magnet, Westonia and Leinster. Marda access roads are largely in place and infrastructure similar to that at Vivien will be mobilised to site in the first half of FY20. Accommodation is to be provided at Windarling. Tampia access roads are in place, no other infrastructure is in place. Accommodation is planned to be provided at Narembeen in a purpose built village.
Costs	Capital costs based on current costs and budget model or recent Feasibility studies.
	Operating costs based on current costs and budget models. Additional costs i.e. void backfilling added where required
	No deleterious elements present
	Using recent average gold price
	Cost models use Australian dollar

	Transport (Vivien & mine site ore haulage) cost based on contracted rates
	Treatment costs based on known current milling costs. No penalties or specifications
	Royalty costs are included in budget models, financial evaluations and feasibility models
Revenue factors	All reserves are generated at \$1750/oz or similar.
	Doré is sold direct to the Perth Mint at spot price
Market assessment	Market window unlikely to change
	Price is likely to go up, down or remain same
	Not industrial mineral
	Discounted cash flows were carried out to determine relative NPV's, using an 8% annual discount rate.
Economic	Sensitivity to gold price, grade and costs was also evaluated.
Social	Agreements are in place with stakeholders including traditional land owner claimants, pastoralists and the local Shires
Other	No material risks or impacts are identified.
	Reserves have been classified according to Resource classification. The majority are Probable with a small amount of Proven
Classification	They reflect the Competent Person's view
	No probable reserves are derived from measured resources
Audits or reviews	Vivien Ore Reserves have been reviewed by an independent mining consultant as part of the Bankable Feasibility process. No fatal flaws were found. No other reserves have been reviewed.
Discussion of relative accuracy /confidence	Confidence is in line with gold industry standards and the companies aim to provide effective prediction for current and future mining operations. No statistical quantification of confidence limits has been generated. Estimates are global by deposit. The Ore Reserve is most sensitive to a) resource grade prediction, and b) gold price.