

18 January 2017  
ASX Announcement  
ASX Code: EAR

## **JULIUS CONFIRMED AS A HIGHLY ECONOMIC GOLD DEPOSIT**

### **HIGHLIGHTS**

- Julius Gold Deposit Stage 1 BFS delivers a conservative initial Ore Reserve of 868kt @ 2.44 g/t Au for **63,965 recovered ounces** at a C1 cash cost of **A\$832 per oz** and delivering an **EBITDA of A\$41M**
- A number of **clear advanced opportunities exist to extend the life** of operations beyond the existing highly profitable low-cost and low-risk Stage 1 Julius Gold Reserve, which would significantly improve the economics
- Total development **capital of only A\$17.5M** as a result of significant infrastructure already in place, including the 2Mtpa Bronzewing Mill
- Mining Lease already granted, and final Julius permitting approvals due in coming months, allowing a **development time frame of less than 6 months from a decision to mine**
- **Echo's immediate focus will be on drilling at advanced regional targets that have potential to be rapidly converted into Resources**, including the Orelia gold deposit located only 8km SW of the Bronzewing Mill.

Echo Resources Limited ('Echo' or 'the Company') is pleased to release the results of the Julius Gold Deposit Stage 1 Bankable Feasibility Study ('Julius BFS').

CEO Mr Simon Coxhell, commented: "The Julius BFS demonstrates the very robust nature of the orebody with low cash costs and a very high IRR of 117% which includes all of the capital required to refurbish the Bronzewing infrastructure.

"There exist a number of excellent opportunities within a short distance from the Bronzewing Mill to substantially add to the mill feed. Currently Echo's global Mineral Resource estimate stands at 16Mt at 1.8g/t for approximately 950,000 ounces<sup>1</sup>. We have reviewed all available data and now plan to prioritise these resources to substantially add to the mine life".

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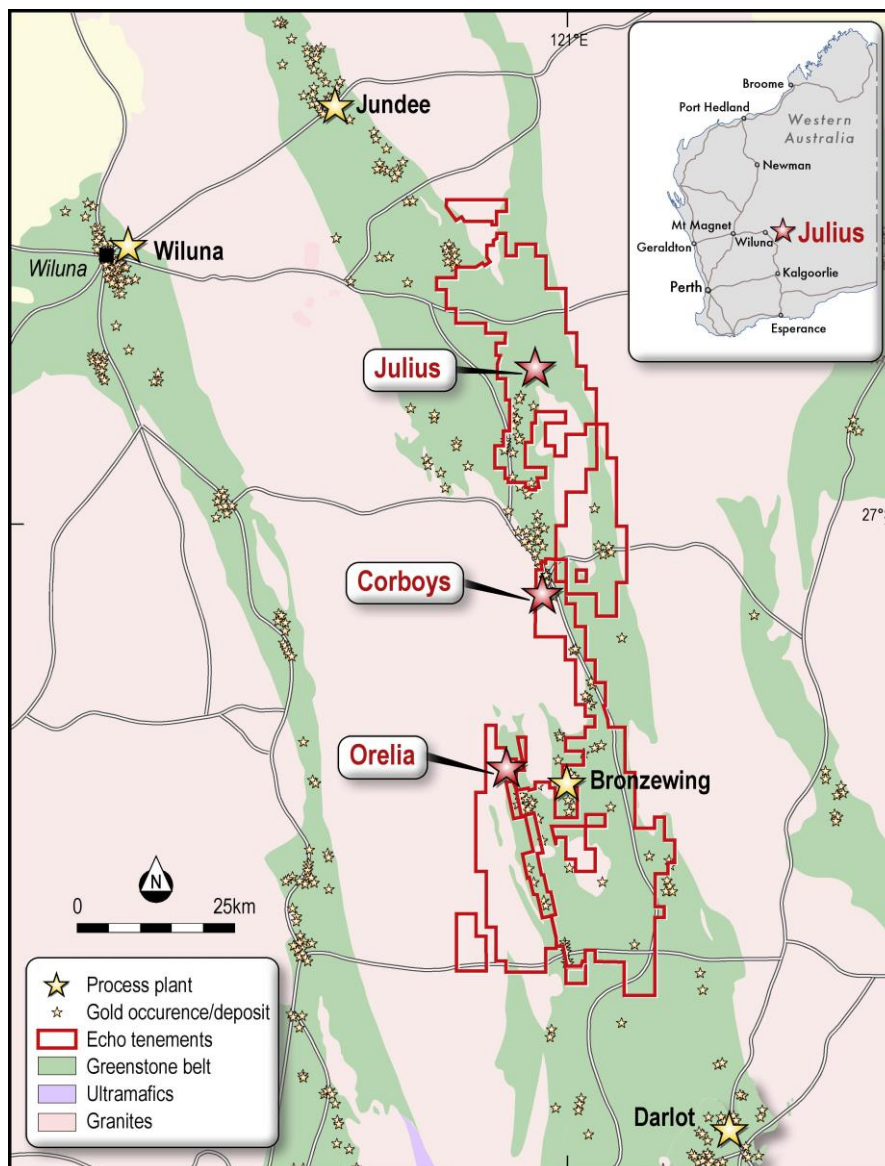
<sup>1</sup> Refer to Appendix 1 for Global Resource Estimate

## Julius Gold Deposit Bankable Feasibility Study

### Overview

The BFS was prepared on the 335,000 ounce (5.2Mt @ 2.0g/t Au)<sup>2</sup> Julius Gold Deposit located 80 kilometres north of the Echo-owned 2Mtpa Bronzewing Processing Facility in the Yandal greenstone belt, Western Australia.

The BFS confirms the 2Mtpa Bronzewing Processing Facility, acquired by Echo under the recently completed merger with Metaliko Resources Limited ('Metaliko', ASX: MKO), can be refurbished for A\$12.5M and confirms Julius is an economic, low-risk deposit and ideal first-feed as part of a long life Yandal gold mining operation.



Combined Echo & Metaliko Tenement Holdings

### Cautionary Statement

The FS referred to in this announcement is based on a Proved and Probable Ore Reserve derived from Measured and Indicated Resources. No inferred Resource material has been included in the estimation of Reserves. The Company advises that Proved and Probable Ore Reserves provides 100% of the total tonnage and gold metal underpinning the forecast production target and financial projections. There is no dependence of the outcomes of the FS and the guidance provided in this announcement on non-Ore Reserve material. No Inferred Mineral Resource material is included in the life of mine plan. Echo has concluded it has reasonable basis for providing the forward looking statements included in this announcement (see Appendix). The detailed reasons for that conclusion are outlined throughout this announcement and Material Assumptions are disclosed in the Appendices. This announcement has been prepared in accordance with the JORC Code (2012) and the ASX Listing Rules.

<sup>2</sup> As announced to the ASX on 23 November 2016, see Qualifications, Competent Persons Statements and Global Resources Table

### Key BFS Outcomes

A gold price of A\$1,600 per ounce was used for pit optimisations and key commercial results of the BFS are presented in the table below. The full Executive Summary of the Julius BFS is provided in Appendix 2.

	Base Case <sup>2</sup>
Gold Price (A\$1:US\$0.75)	\$1,600/oz (US\$1,200/oz)
Reserves Mined <sup>1</sup>	868,089t @ 2.44g/t
Initial Life of Mine (LOM)	<2 years
LOM Strip Ratio	5:1
LOM Gold Production <sup>1</sup>	63,965oz
Mill Refurb Capital Cost <sup>3</sup>	\$12.5M
Julius Development Capital Cost <sup>3</sup>	\$2.6M
First Fill, Owners Costs & Contingency	\$2.4M
LOM Revenue	\$102 million
C1 Cash Cost <sup>4</sup>	\$832/oz
All-in Sustaining Costs incl. Full Mill Refurbishment <sup>5</sup>	A\$1,186/oz
Internal Rate of Return	117%
LOM EBITDA	\$41 million

**Table 1: Key Project Economics**

Notes 1: The Ore Reserves underpinning the above production target have been prepared by a Competent Person or Persons in accordance with the requirements of the JORC (2012) Code. Refer to JORC tables, Qualifications and Competent Persons Statements. Recoveries through the Bronzewing Processing Facility are assumed to be 94%

2: See Appendix for Forward Looking and Cautionary Statements

3: See Appendix for Forward Looking and Cautionary Statements, ±10%, includes \$2.5M contingency

4: C1 Cash Cost includes mining and processing operating costs, site administration costs, transport, refining charges

5: AISC = C1 cash cost, depreciation and amortisation (Bronzewing Refurbishment), corporate, royalties, sustaining capital costs.

Importantly, the Julius Stage 1 BFS assumed the full cost the mill refurbishment (\$12.5M) which is amortised over the initial life of 1.5 years, however any extensions to the life of the mining operation may greatly reduce this AISC. It should be noted that of the AISC of A\$1,186, amortisation of capital costs presently account for A\$274 per ounce.

### Moving Forward

Results of the Julius Stage 1 BFS confirms Julius is an ideal, low-risk start-up mining operation, with very significant potential for improvements to economics through increases in mine life. Significant upside remains through the optimisation of mine scheduling at the Project and the Company has planned a large 2017 exploration and development program on its Yandal tenements to grow existing resources and reserves prior to a final commitment to refurbishment of the Bronzewing Processing Facility. This will be the focus of the Company's activities for the first half of 2017.

## BFS Highlights Substantial Upside

The BFS study has highlighted the following areas which provide likely project upside:

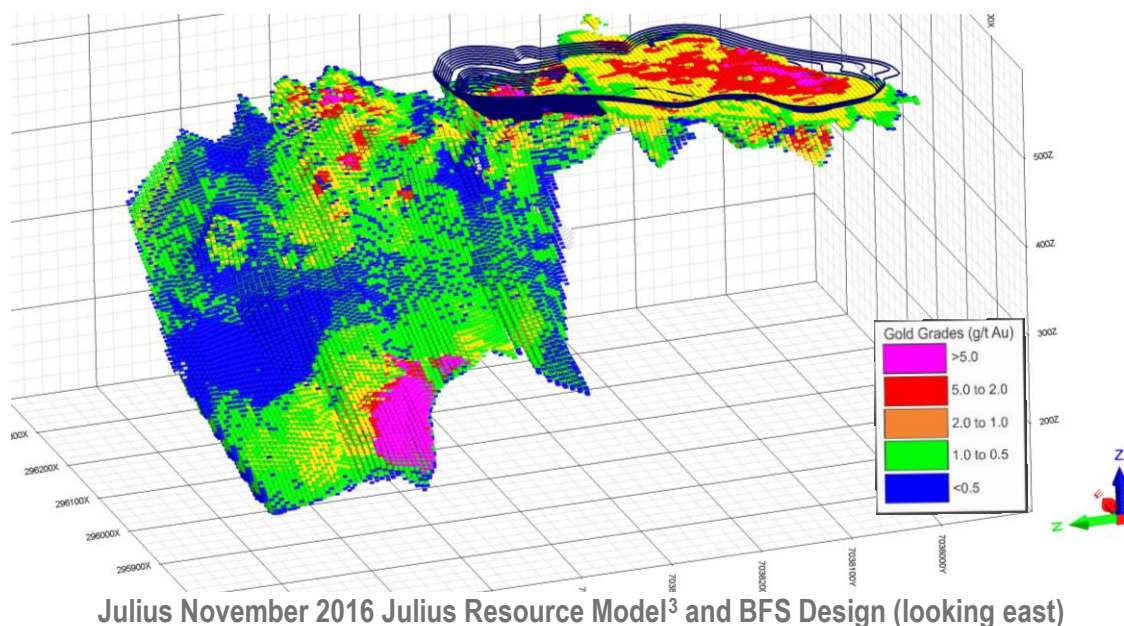
- Potential to improve project economics by saving in operating cost and schedule timing.
- An operational mill in the region provides strategic value for Echo providing a processing route for other Echo resources in the district with substantial leverage for Echo in the development of those assets.
- Bronzewing mill capacity is only at 50% for the project life, providing opportunity for toll milling which will have the twofold effect of spreading fixed costs thus lowering Julius production cost and generating revenue from milling fees.
- Review of the Julius resource model vs the mining model giving consideration to cut and uncut grades suggests that with careful grade control and mining practices there is potentially an additional 10,000 ounces of gold which may be realised, above the forecast LOM gold production.
- Various low grade stockpiles exist on project tenements that may provide further economic mill feed.
- Production from Julius alone is sufficient to repay the capital of the refurbishment and restart of an operating mill, creating opportunity for reassessment of the various historic mines on the tenements under current gold price and operating cost regimes. A number of advanced resources lie within a 15 kilometre radius of the Bronzewing plant and these will be closely reviewed with the aim of adding reserves and mine life with minimal expenditure.
- With the mill operating, exploration success for Echo can be readily monetised. The cash generated by the project can be utilised for this exploration over a large prospective ground holding in one of the most prospective greenstone belts of in Australia.

## Julius Gold Deposit – Resource & Reserve Expansion

The Stage 1 Julius open pit Ore Reserve as documented within the BFS has been based on the highest grade, lowest risk and most cost effective start-up mining opportunity. The results of the pit optimisation and sensitivity analysis completed as a part of the BFS highlighted the potential to develop a series of staged pit designs building on the knowledge gained during the initial mining stage.

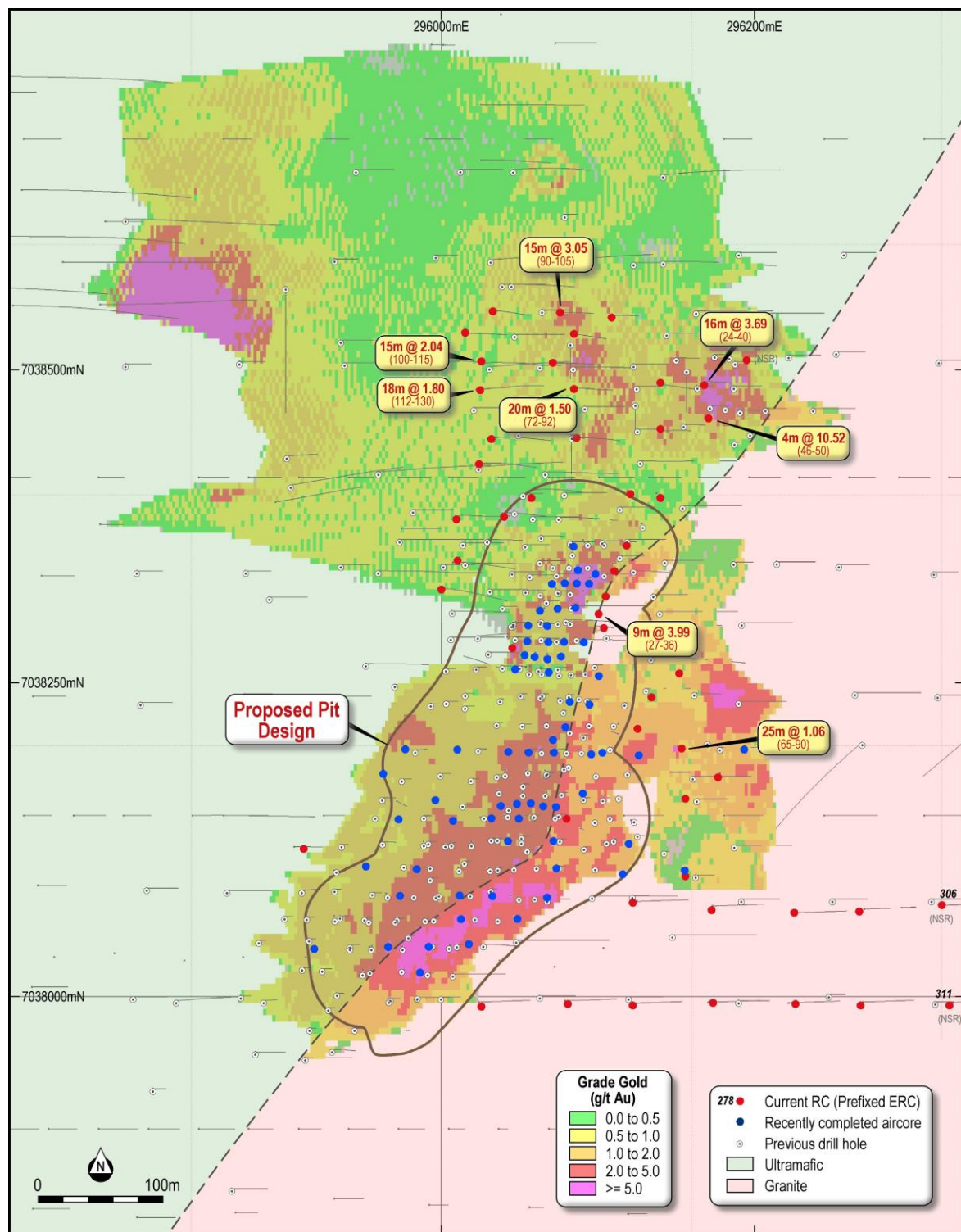
Close review of the drill data and block model has shown that additional infill and resource development drilling targetted specifically along strike and in the high grade areas of the resource down dip suggests successful drilling in these areas will lead to an expansion of the contemplated mining operation as documented in the BFS.

Infill drilling to the North of the planned Julius open pit has high potential of leading to an increase in the subsequent mine life and profitability. This has been highlighted by results of the pit optimisation and limited drilling in key locations of the potential northern extension. A drilling program to investigate all of these options has been planned and will commence in Q1-17.



<sup>3</sup> As announced to the ASX on 23 November 2016, see also Competent Persons Statements





Plan Display – November 2016 Julius Resource Model<sup>4</sup>

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<sup>4</sup> As announced to the ASX on 23 November 2016, see also Competent Persons Statements

## Appendix 1: Echo Global Resource Estimates

### Echo Mineral Resource Estimates<sup>7</sup>

Echo Mineral Resources	Measured			Indicated			Inferred			Total			Ownership	Cut-off
	Tonnes (Mt)	Au g/t	Au oz	Tonnes (Mt)	Au g/t	Au oz	Tonnes (Mt)	Au g/t	Au oz	Tonnes (Mt)	Au g/t	Au oz		
Julius <sup>4</sup>	1.8	2.1	124,227	1.6	1.3	67,789	1.8	2.5	142,991	5.2	2.0	335,008	100%	0.8
Regional <sup>5</sup>							2.1	1.5	99,925	2.1	1.5	99,925	100%	0.5
Corboys <sup>3</sup>				1.7	1.8	96,992	0.5	1.9	28,739	2.1	1.8	125,455	100%	1.0
Orelia (MKO) <sup>2</sup>				2.3	2.4	175,306	3.3	1.6	173,493	5.6	1.9	348,880	100%	0.9
Woorana North (MKO) <sup>2</sup>				0.3	1.7	13,811				0.3	1.7	13,811	100%	0.5
Woorana South (MKO) <sup>2</sup>				0.1	2.6	3,129				0.1	2.6	3,129	100%	0.5
Fat Lady (MKO) <sup>1,2</sup>				0.7	0.9	19,669				0.7	0.9	19,669	70%	0.5
Mt Joel 4800N (MKO) <sup>1,2</sup>				0.2	1.7	10,643				0.2	1.7	10,643	70%	0.5
<b>Total Mineral Resources</b>	<b>1.8</b>	<b>2.1</b>	<b>124,227</b>	<b>6.7</b>	<b>1.8</b>	<b>387,339</b>	<b>7.7</b>	<b>1.5</b>	<b>445,47</b>	<b>16.2</b>	<b>1.8</b>	<b>956,520</b>		

### Echo Mineral Reserve Estimates

Echo Mineral Reserves	Proved			Probable			Total			Ownership	Cut-off
	Tonnes (Mt)	Au g/t	Au oz	Tonnes (Mt)	Au g/t	Au oz	Tonnes (Mt)	Au g/t	Au oz		
Julius <sup>6</sup>	0.78	2.5	62,500	0.08	2.0	5,600	0.87	2.4	68,100	100%	0.8
<b>Total Mineral Resources</b>	<b>0.78</b>	<b>2.5</b>	<b>62,500</b>	<b>0.08</b>	<b>2.0</b>	<b>5,600</b>	<b>0.87</b>	<b>2.4</b>	<b>68,100</b>		

#### Notes:

1. Resources are adjusted for Metaliko 70% ownership interest

2. Resources estimated by Coxrocks (refer to Competent Persons Statements) in accordance with JORC Code 2012. For full Mineral Resource estimate details refer to the Metaliko Resources Limited announcement to ASX on 1 September 2016. Metaliko is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning mineral resource estimates in the previous announcement continue to apply and have not materially changed.

3. Resources estimated by HGS (refer to Competent Persons Statements) in accordance with JORC Code 2012, for full details of the Mineral Resource estimate refer to the Metaliko Resources Limited announcement to ASX on 23 August 2016. Metaliko is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning mineral resource estimates in the previous announcement continue to apply and have not materially changed.

4. Resources estimated by Mr Lynn Widenbar (refer to Competent Persons Statements) in accordance with JORC Code 2012, for full details of the Mineral Resource estimate refer to the Echo Resources Limited announcement to ASX on 23 November 2016. Echo Resources Limited is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning mineral resource estimates in the previous announcement continue to apply and have not materially changed.

5. Resource estimates include Bills Find, Shady Well, Orpheus, Empire & Tipperary Well and were estimated by Golders (refer to Competent Persons Statements) in accordance with JORC Code 2004, for full details of the Mineral Resource estimates refer to the Echo Resources Limited prospectus released to ASX on 10 April 2006.

6. Reserve estimated by Mr Gary McRae (refer to Competent Persons Statements) in accordance with JORC Code 2012.

7. Mineral Resources are inclusive of Ore Reserves.



## **Appendix 2: Julius BFS Executive Summary**

### **JULIUS GOLD PROJECT (STAGE 1) BANKABLE FEASIBILITY STUDY**

#### **Executive Summary**

January 2017

# JULIUS GOLD PROJECT (STAGE 1) BANKABLE FEASIBILITY STUDY

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## 1. EXECUTIVE SUMMARY

### 1.1 Summary of Julius Project KPI's (Australian \$)

Julius Project KPI's - Operational	
Tonnes Mined and Processed	868,089 tonnes
Headgrade	2.44 g/t
Recovery	94%
Gold Produced	63,965 ounces
Initial Life of Mine	21 months
- Development	6 months
- Operating	15 months
Total Cost per Tonne Processed	\$61 per tonne
LOM Mining Cost	\$16.24M
LOM Haulage Cost	\$11.93M
LOM Processing Cost	\$19.36M
LOM G&A Cost	\$5.68M

Julius Project KPI's - Economic	
EBITDA	\$41M
Internal Rate of Return (100% Equity)	117%
NPV <sub>0</sub>	\$23.9M
Assumed Gold Price	\$1,600 per ounce
C1 Cash Cost	\$832 per ounce
AISC	\$1,186 per ounce
Project Revenue	\$102.3M
Operating Costs	\$53.2M
Royalties	\$4.8M
Corporate Costs	\$3.0M
Tax	\$0.03M
Development Capital	\$17.5M

Table 1-1: Key Project Economics

### 1.2 Executive Summary

Echo Resources Limited's ('Echo') Stage 1 Bankable Feasibility Study (BFS) considered the development of the Julius Gold Project ('Julius') located adjacent to the Barwidgee Road approximately 73km south-east of Wiluna, Western Australia. Ore mined from the Julius Project will be transported and processed at Echo's existing 2 Mtpa Bronzewing Plant located 72 km to the south.

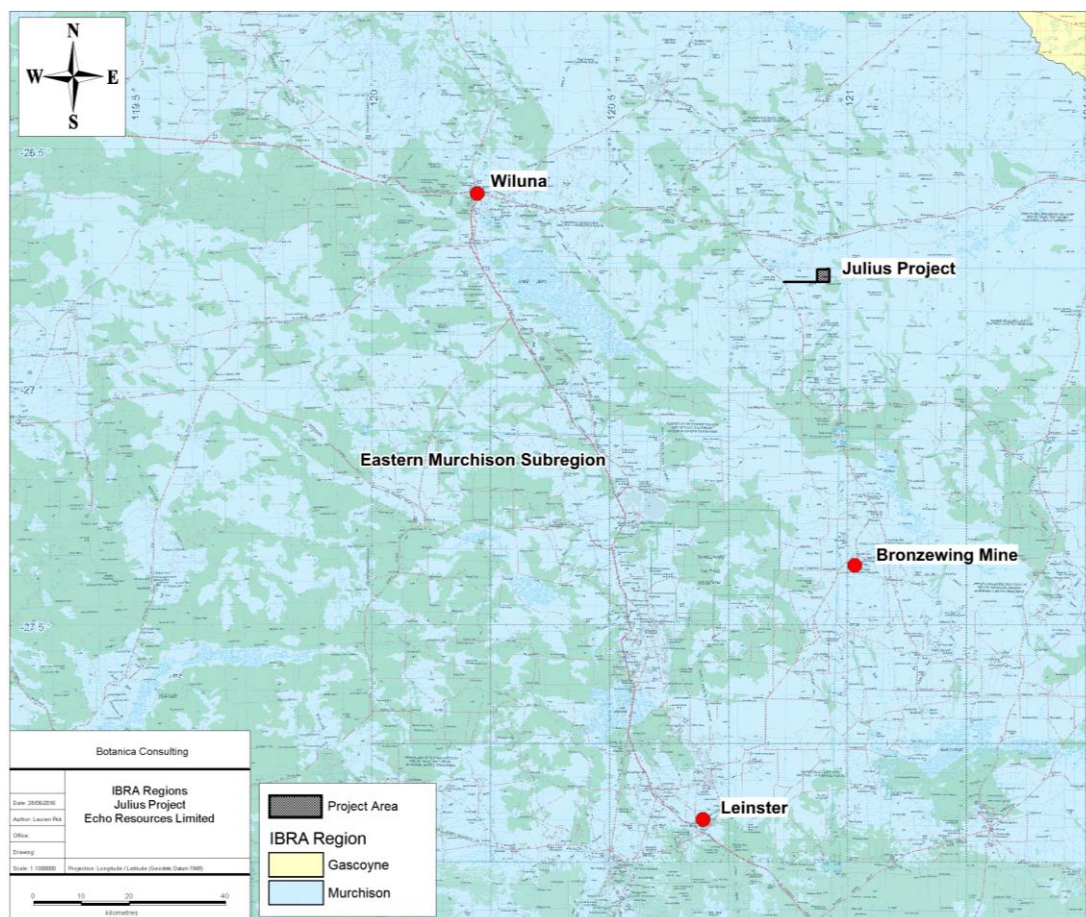


Figure 1-1 Project Location

### 1.3 Overview

This Bankable Feasibility Study (BFS) proposes a contract mining operation at Julius with the ore transported by road trains to the Bronzewing plant for processing. The Bronzewing plant utilizes a conventional comminution and CIL processing path and has a capacity of at least 1.5 Mtpa when operated on a proposed 2 week on 2 week off roster. The current mine plan treats 868kt of ore at a grade 2.44 g/t to produce 63,965 oz of gold over a 15 month time period.

The major components of the project development will be the refurbishment of the Bronzewing plant, development of the Julius site facilities and the improvement of the roads between the Julius site and the Bronzewing plant prior to commencement of the road haulage of ore.

### 1.4 Tenure

The project is on granted mining lease M53/1099. A mining proposal, mine closure plan and clearing permit have been lodged with the Department of Minerals and Petroleum with final approvals expected within a 3 month time frame. A Land Access Native Title Agreement has been negotiated and signed with the Wiluna Native Title Holders and a State Deed executed allowing ready access to the site. Positive discussions with the Wiluna Shire have taken place in regards to road haulage of the ore along the Barwidgee Road and surveys have been completed.

### 1.5 Geology and Resources

The Julius Gold Project is located midway between the multi-million ounce Jundee and Bronzewing gold camps. Julius is a virgin deposit, located underneath a minimum of 8 metres of transported cover, and on the margin of a strongly sheared shallow north-west dipping granite greenstone contact. The deposit is deeply weathered, up to and in excess of 60 metres, and comprises three zones of mineralisation. These zones are an upper pisolitic laterite mineralised zone, sitting on top of a well-developed supergene gold zone, grading down into primary mineralisation

characterised by strong shearing, sericite alteration, silicification, minor quartz veining and minor enrichment in sulphides, principally pyrite.

Extensive reverse circulation (RC), aircore and diamond drilling has defined the current extents of the deposit. Drill spacing ranges from 40 m x 40 m on the peripheries of the deposit, to 10 m x 10 m drill spacing in the centre of the deposit. The most recent drilling conducted as part of this BFS includes a total of 141 aircore holes (6,286 m), 53 RC holes (5,113 m) and 9 HQ triple tube diamond drill holes (481 m). Nine individual wireframes, at a nominal 0.8 g/t Au, have been interpreted and constructed, followed by data subset and analysis, variography, determination of top cuts and finally interpolation via Ordinary Kriging. Widenbar and Associates completed this work which has resulted in the following resource estimate.

<b>Total Resource (Ordinary Kriging) 0.8 gm/t Cut-off</b>					
<b>Resource Category</b>	<b>Volume</b>	<b>Tonnes</b>	<b>SG</b>	<b>Au Uncut</b>	<b>Au Ounces</b>
Measured	740,230	1,803,888	2.44	2.14	124,227
Indicated	647,996	1,619,393	2.50	1.30	67,789
<b>Measured + Indicated</b>	<b>1,388,226</b>	<b>3,423,281</b>	<b>2.47</b>	<b>1.74</b>	<b>192,017</b>
Inferred	693,932	1,804,223	2.60	2.47	142,991
<b>Total</b>	<b>2,082,157</b>	<b>5,227,504</b>	<b>2.51</b>	<b>1.99</b>	<b>335,008<sup>5</sup></b>

Table 1-1 Total Resource 0.8g/t cut off

For use in pit optimization and Mineral Reserve estimates the resource model has been re-blocked to replicate a “selective mining unit” of 5 m along strike (North-South), 2.5 m across strike (East-West) and 2.5 m vertical applicable to the proposed fleet size and mining methodology. The Mineral Resource model incorporated an SMU of 5m (N-S), 2.5m (E-W) and 2.5m vertical and therefore no additional mining dilution was applied. Therefore no additional mining dilution was applied. This formed the mining model, accounting for mining dilution and ore loss and is a conservative model with considerable potential upside.

<b>Total Resource (Ordinary Kriging) 0.8 gm/t Cut-off Adjusted for Cut Grades, Mine Loss and Mine Dilution</b>					
<b>Resource Category</b>	<b>Volume</b>	<b>Tonnes</b>	<b>SG</b>	<b>Au Cut</b>	<b>Au Ounces</b>
Measured	667,188	1,610,470	2.41	2.01	103,899
Indicated	577,063	1,441,264	2.50	1.22	56,424
<b>Measured + Indicated</b>	<b>1,244,250</b>	<b>3,051,733</b>	<b>2.45</b>	<b>1.63</b>	<b>160,323</b>
Inferred	626,594	1,629,144	2.60	1.55	81,031
<b>Total</b>	<b>1,870,844</b>	<b>4,680,877</b>	<b>2.50</b>	<b>1.60</b>	<b>241,354</b>

Table 1-2 Total Resource - Mining Model 0.8g/t cut off

## 1.6 Mining

The defined Mineral Resources at Julius are within 220 m depth from the surface and are of a lode style mineralisation at depth requiring a degree of mining selectivity. The upper flat lying laterite deposit located near surface will be a very simple start to the mining operation with the laterite comprising in excess of 50% of the ore type to be mined. The majority of the strongly oxidized material within the proposed pit design should be able to be excavated without blasting. The hardcap at surface and material below 40m depth will require intermittent blasting.

<sup>5</sup> As announced to the ASX on 23 November 2016, see also Competent Persons Statements

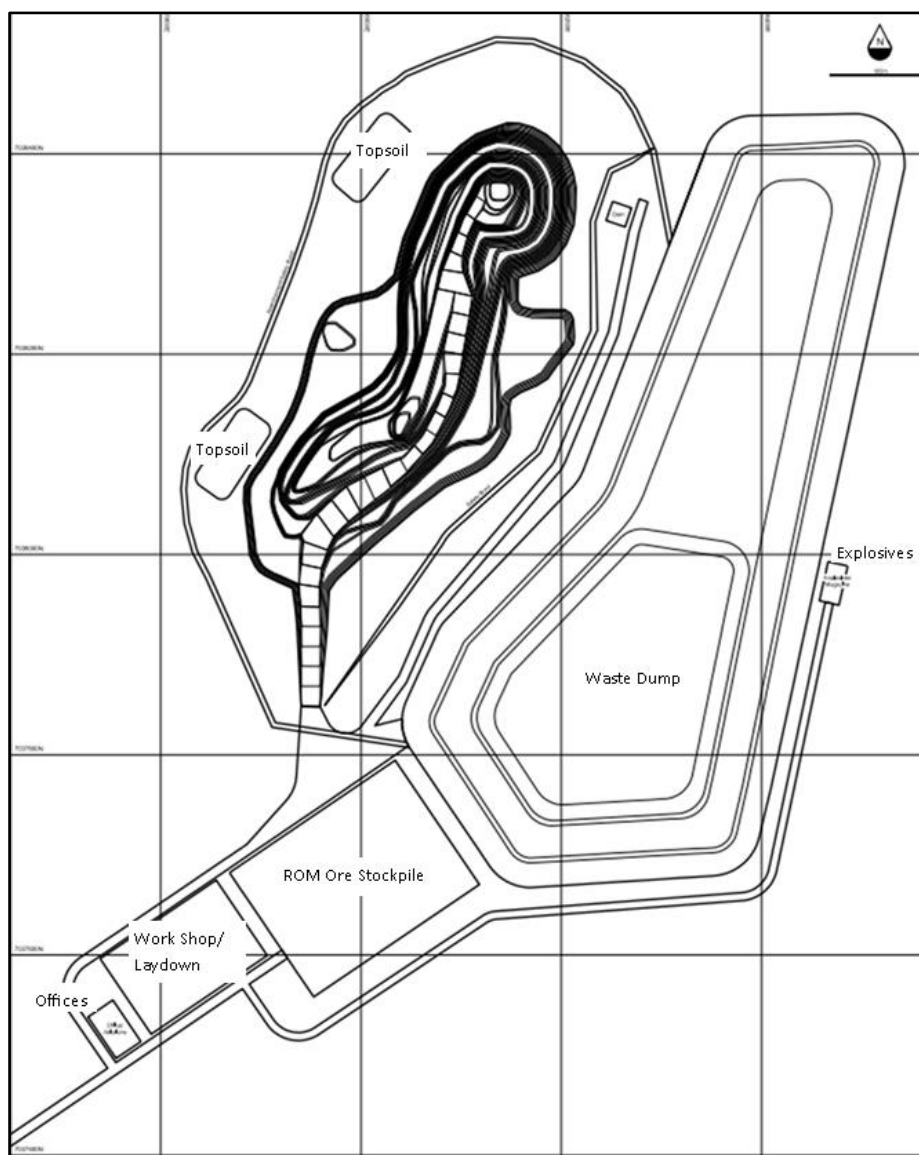


Figure 1-2 Julius Site Layout

Given these conditions, conventional open pit mining techniques using drill and blast, where required, with material movement by hydraulic excavator and trucks will be employed. The project scale and selectivity would suit a typical gold fields mining fleet comprised of 120 t class excavators in a backhoe configuration matched to 100 t class mine haul trucks. Ore will be mined to a stockpile located in the vicinity of the pit exit and then rehandled into road trains for haulage to the Bronzewing plant. It is proposed that mining activities will be undertaken by an experienced contractor.

Pit optimisations were carried out using industry standard methods and Whittle 4x Software. The results of the open pit optimisations were put in context of sensitivities, risks, contained ounces, mine life and total project size. Pit shells were chosen to balance the maximum project value and the operating cost. As such, the pit shell with a balance between producing the maximum cash flow and a lower operating cost per ounce was selected. Additionally, a high strip ratio section of the selected pit shell was excluded from the final design. Future cutbacks and extensions to the low cost current Stage One pit design are apparent and will be reviewed following additional resource development drilling at Julius.

The final pit design was prepared to enable practical and efficient access to each bench. The designs were based on the selected optimised shell and geotechnical design criteria prepared by an independent specialist. A general site layout is shown in Figure 1-2 above.

A staged approach was taken to the pit development including overall pit slope angles of approximately 45% and batter angles ranging from 45-65 degrees as determined independently by a geotechnical engineer. Initial mining will target shallow high-grade laterite ore in the southern area of the overall design. Mining then moves on to the extraction of the shallow lower grade laterite in the central area of the overall design. Finally mining will move to the stripping of overburden at the northern end of the overall design. Upon completion of this northern stripping, mining will continue to final design on a bench by bench basis. The resultant schedule is illustrated below.

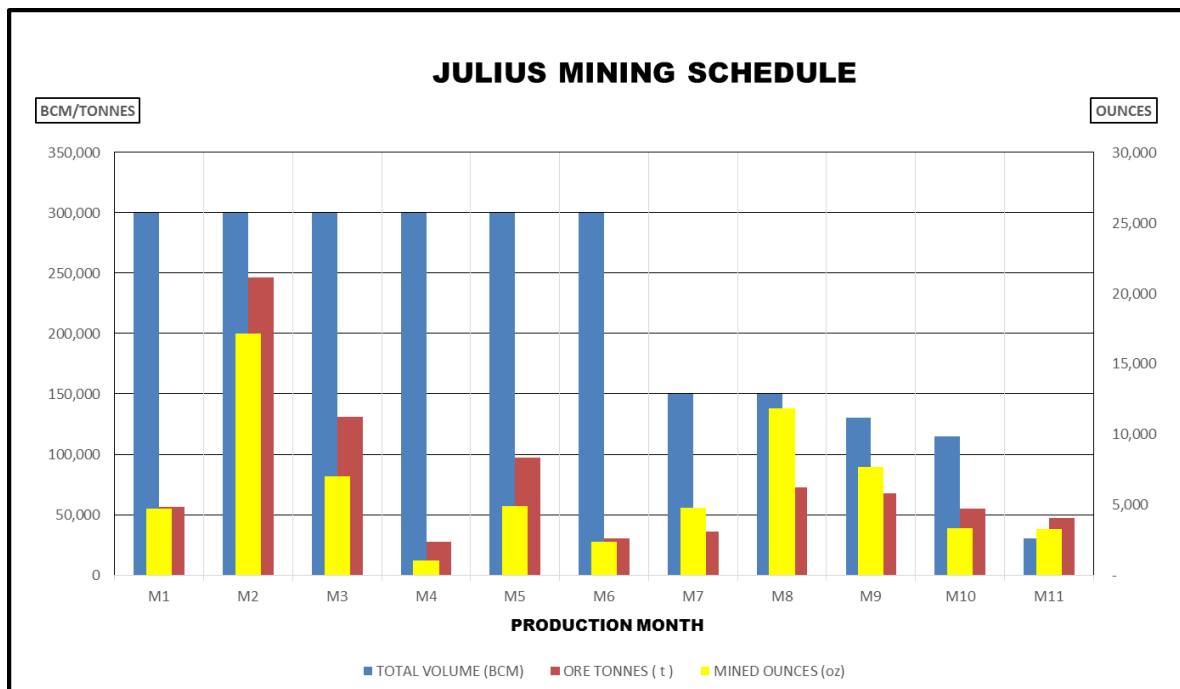


Figure 1-3 Julius Mining Schedule

The Ore Reserves estimate for the project is shown in Table 1-3 below.

	Proved			Probable			Total		
Cut-Off Au g/t	Tonnes (kt)	Grade Au g/t	Ounces Au (koz)	Tonnes (kt)	Grade Au g/t	Ounces Au (koz)	Tonnes (kt)	Grade Au g/t	Ounces Au (koz)
0.8	783.0	2.5	62.5	85.0	2.0	5.6	868.0	2.4	68.1

Table 1-3 Julius Ore Reserve

The Ore Reserve estimate is based on the Mineral Resource estimate classified as “Measured” and “Indicated” after consideration of all mining, metallurgical, social, environmental and financial aspects of the operation, the Proved Ore Reserve has been derived from the Measured Mineral Resource, and the Probable Ore Reserve has been derived from the Indicated Mineral Resource. See JORC Table Section 4 below for full details.

## 1.7 Metallurgy and Process Plant

Sufficient metallurgical testwork has been completed on samples representative of the 3 main ore zones of the Julius deposit, the laterite, upper oxide and lower oxide ore zones. The testwork established that the ore is amenable to treatment through conventional CIP/CIL plant flowsheets with an installed gravity circuit.

The primary findings of the program were that the Bronzewing plant flowsheet and installed equipment is ideally suited to treating the Julius ore. A leach tail grade of up to 0.15g / t could be achieved from a grindsize of 80% passing 106 microns. Based on the results of metallurgical testwork completed a gold recovery of 94% has been adopted.



Other conclusions from the testwork programme were:

- There are no elements contained in the ore that are deleterious to gold recovery and there is a low probability for negative environmental impact from contained elements.
- The Julius ore gold recovery is not particularly sensitive to grind size up to 80% passing 150 microns.
- Blending of oxide and laterite ores and possible coarsening of grind size has the potential to increase the treatment rate without affecting recovery.
- High moisture content of the oxide samples, with the associated high clay content may create materials handling issues in processing the oxide ore. Operational measures will be taken to reduce the effect of the high moisture content.

The Bronzewing treatment plant has a two stage crushing circuit, followed by SAG mill with installed pebble crusher. The comminution circuit includes gravity extraction, followed by CIL and carbon elution circuits. It is a conventional flowsheet for a gold ore treatment plant.

Based on modelling results, a throughput rate of 180 t/hr was selected for the BFS processing rate. This rate equates to an annualised throughput of 1.5Mtpa, and is consistent with the Julius mine production rate if the plant is operated on a two week on, two week off cycle.

The Bronzewing Plant will require refurbishment to treat the Julius ore. The proposed refurbishment approach follows:

- Conduct equipment checks to manufacturer's recommendations, change lubricants and then progressively start equipment and utilise condition monitoring techniques to establish that equipment is sufficiently reliable to proceed with plant commissioning.
- Motors 30 kW and below, to be replaced if required, as the cost of refurbishing them is uneconomic.
- Re-certify all classified equipment by qualified structural and mechanical inspectors. Site cranes will require a structural re-certification because they are nearly 25 years old. The mechanisms will be more than 10 years old and will similarly require major overhaul.

## **1.8 Infrastructure and Services**

The mill is located approximately 83km northeast of Leinster and 800km north east of Perth in Western Australia. The Julius mine is located 75km north of the plant, and is situated adjacent to the Barwidgee Road approximately 73 km South East of Wiluna.

There is existing road access to the Bronzewing plant and the Julius mine site. The Bronzewing facilities include an unsealed airstrip suitable for propeller aircraft which is approximately 1.5 hours flying time from Perth. The all-weather Leinster airstrip also may also be available on agreement with BHP.

Major infrastructure to support the operation includes:

- All power infrastructure is in place and a suitable contract power supplier will be engaged prior to recommissioning.
- Tailings will be stored in the depleted Discovery Pit, which is located approximately 1.7km south west of the plant. The pit has capacity for storage of approximately 12Mt of tailings well exceeding the current life of mine.
- The Bronzewing site administration building remains in place and has sufficient office space to house all required personnel. The office serviced a much larger scale of operation and workforce than is proposed for the Echo project. The site office will require some minimal maintenance and cleaning work to return to an operable condition.
- Suitable site office and accommodation facilities will be provided at the Julius mine site, by relocation of spare transportable buildings from Bronzewing.

- Ore haulage from the Julius mine to the Bronzewing plant will be undertaken on purposely constructed sections of private haul road and also utilising upgraded sections of the Barwidgee road. The total haul road length is approximately 73km.
- The Bronzewing site includes an accommodation village suitable for housing up to 200 people in its current configuration. The village is in good condition with only minor maintenance required to become fully functional.
- Raw water will initially be sourced from the historical open pits in proximity to the process plant.
- An upgraded communications system will maintain sufficient local and external communications for operation and emergency management and will provide efficient internet connectivity and speed for data transfer between site and Perth office.

## 1.9 Environment, Community and Approvals

Environmental approvals for Julius were coordinated by Botanica Consulting. The following studies have been conducted:

- Flora and Fauna Survey conducted by Botanica Consulting in May 2016
- Hydrological and Hydrogeological assessment conducted by Groundwater Resource Management in September - October 2016
- Geotechnical Assessment conducted by Green Geotechnical Pty. Ltd.
- Waste rock characterization and soil characterization studies supervised by Botanica Consulting

Social studies for the Julius Project were co-ordinated by Echo and the Tarlka Piarku Aboriginal Corporation who represent the Wiluna Native Title Holders RNTBC. The work led to execution of the Julius Gold Project Land Access Native Title Agreement

Based on work completed to date, there are no environmental impediments to the Project proceeding.

Details on the Julius Project Mining tenement held by Echo are listed below.

Tenement	Holder	Grant Date	Current Area (ha)
M53/1099	Echo Resources Limited	13-12-2016	736
L53/203	Echo Resources Limited	2-08-2016	44.94

Table 1-4 Julius Project Tenement Ownership

## 1.10 Project Implementation

To commence operation of the Yandal Gold Project the following stages will be undertaken:

- Completion of the Project Management Plan for DMPR project approval.
- Development and implementation of a site wide occupational health and safety management system to govern the operations. The key driver behind the development and implementation of the system is the commitment to providing a safe and healthy workplace and sustainable environment for all stakeholders.
- Development of Human Resources policies and an organisational structure to support the operation.
- Recruiting of key management personnel and the workforce to successfully commence and operate the project.
- Refurbishment of the Bronzewing Processing Facility – a scope has been prepared in the BFS that will form the basis for engagement of suitable contractors to conduct the work.
- Reinstating all infrastructure required to service and supply the operations.
- Construction of new sections of haul road, and modification and maintenance to the Barwidgee road to facilitate ore haulage from Julius to the treatment plant.
- Recommissioning of the Bronzewing Accommodation Village and engagement of a catering and camp management contractor.
- Provision of office, accommodation facilities and associated infrastructure to the Julius mine site.

- Re-establishment of power supply at the Bronzewing power station.
- Execution of key reagent and consumable supply contracts to support ore processing needs. Provision of first fills.
- Appointment of a suitably experienced open pit mining contractor to mine Julius.
- Commissioning of the mill to process the Julius ore and production of gold dore.

Key personnel will be recruited as appropriate and will provide project management supervision and support through the stages of project development as it ramps up to operational status.

Due to the nature of the work required, the refurbishment of the Bronzewing treatment plant will, to a large extent, dictate the timing for start-up of operations. The refurbishment schedule contemplated in this study has a duration of approximately four to six months for completion.

Due to the straightforward mining method and low prestrip, the Julius mining schedule can be timed to dovetail with the mill start up without significant inconvenience or capital and operational expenditure.

## 1.11 Operations

Sufficient skills exist in the Western Australian labour market to adequately cover the operational needs of the project. The mine will employ a contract mining services company, with management and technical support from Echo employees. The processing operation will be managed and operated by a team of Echo employees.

Support services will be provided for the operations and will be based at the Bronzewing site. The Perth corporate office will also support and service the site operation.

The project will operate on a FIFO basis, and efforts will be made to engage labour or contractors from nearby local communities wherever possible.

## 1.12 Costs

As part of the BFS capital cost were estimated and are summarized below.

Work Area	Estimate (A\$)
Julius mine infrastructure setup	258,715
Haul road establishment	1,353,000
Accommodation village maintenance	252,000
Infrastructure setup	285,000
Administration	519,050
Bronzewing plant refurbishment	12,386,812
Consumables and first fill	377,010
Owners costs	478,560
<b>Sub Total</b>	<b>15,910,147</b>
Contingency 10%	1,591,015
<b>Total project CAPEX</b>	<b>17,501,162</b>

Table 1-5 CAPEX Summary

The major capital cost for the project is for the refurbishment of the Bronzewing Processing Facility. Mintrex Pty Ltd (Mintrex) was engaged to prepare the capital cost estimate and an operating cost estimate to a BFS level. Mintrex is an engineering consulting, project management and asset management organisation providing service to the international mineral extraction industries. Their extensive experience in the WA gold industry makes them very well qualified to prepare BFS estimates for processing facilities.

The capital cost estimate prepared by Mintrex is summarised as follows.

Area Description	Man hours Estimate	Materials Cost	Area Cost
General plant services	10770	\$1,213,500	\$2,263,986
Comminution	12668	\$2,029,000	\$3,262,276
Gravity and classification	2695	\$590,500	\$851,934
Leach and adsorption	9920	\$868,150	\$1,830,429
Elution and gold room	2968	\$120,000	\$411,217
Reagents and services	2419	\$111,500	\$348,682
Construction overheads	0	\$1,954,448	\$1,954,448
Commissioning	2464	\$90,000	\$510,000
Design	1966	\$0	\$342,585
Site management (Mintrex / Echo)	4230	\$0	\$611,255
<b>Total Capital</b>	<b>50100</b>	<b>\$6,977,098</b>	<b>\$12,386,812</b>

Table 1-6 Bronzewing plant refurbishment cost estimate

The capital costs are presented in November 2016 Australian dollars to a nominal accuracy of plus or minus 20%. A detailed breakdown of the estimate is included in the Mintrex Bronzewing Feasibility Study report.

Operating costs were estimated for the operation of the process plant, mine operating costs and general and administration costs.

Activity	Est (A\$ per annum)	A\$ per tonne Ore
Labour	4,880,400	6.51
Maintenance fixed cost	1,297,580	1.73
Mobile equipment	1,281,673	1.71
Power	3,856,875	5.14
Consumables	4,382,404	5.84
Maintenance variable	1,029,000	1.37
<b>Total</b>	<b>16,727,932</b>	<b>22.30</b>

Table 1-7 Process Operating Cost Summary

Activity	\$/bcm Mined	A\$ per tonne Ore
Drill and Blast	0.47	1.29
Load and Haul	5.42	14.84
Rehabilitation	0.17	0.46
Mobilisation and Establishment	0.25	0.69
Clear and Grub	0.04	0.12
Grade Control	0.32	0.86
Mining supervision	0.56	1.53
Dewatering	0.03	0.07
Ore haulage	-	13.36
<b>Total</b>	<b>7.25</b>	<b>33.21</b>

Table 1-8 Mining Operating Cost Summary

Item	Basis	Estimate (A\$ / Yr)	A\$ per tonne
Site manning contractors and employees	62		
Travel (flights)	2,184	698,880	0.93
Accommodation and messing (man days)	15,309	841,995	1.12
G&A salaries	14 ppl	2,066,400	2.76
Communications (monthly rent)	9,000	108,000	0.14
Stationary, postage, computer supplies	Mintrex est	34,000	0.05
Light vehicles (5)	Mintrex est	151,537	0.20
Insurance	Mintrex est	300,000	0.40
Training	Est	20,000	0.03
Consumables	Est	40,000	0.05
<b>Total</b>		<b>4,260,812</b>	<b>5.68</b>

Table 1-9 General and Administration Cost Summary

### 1.13 Economic Evaluation

A financial model has been developed for the purpose of evaluating the economics of the Julius Gold Project. Summary results from the financial model outputs are presented in the tables below. The financial projections have been prepared for the base case treatment of 868,089 tonnes at 2.44 g/t Au and a gold price of \$1,600 per ounce:

The economic modelling for the Julius Gold Project indicates the following:

- Capital expenditure (\$17.5M)
- Production of 63,965oz over 15 months post commissioning of the mill;
- Processing of 868,089t at 2.44g/t through the plant from the Julius mine. Project also delivers a fully operational facility with capacity available to treat other Echo ore or to take advantage of toll milling opportunity
- C1 cash cost of \$832 per ounce produced, with all in sustaining cost of \$1,186 per ounce produced. The AISC is heavily biased by the sunk capital cost for project implementation.
- Internal Rate of Return of 117%.
- Positive cash flows starts in month 7, with \$23.9M free cash generated over the 21 month project life.
- The total cost of production for the Julius ore is \$61 per tonne of ore processed.

Sensitivity analysis was undertaken to determine the effect on project NPV against changes to a variety of input variables. From the analysis it is apparent that the project is most sensitive to changes in the realized gold price rather than operating or capital cost.

The sensitivity analysis demonstrates the project is very robust and supports the high IRR (105%) in the financial model.

### 1.14 Opportunity & Risk

#### 1.14.1 Opportunity

Whilst the project outlined in the BFS study produces a healthy return on investment with a low risk profile there are a number of opportunities which may deliver substantial upside to Echo. Potential opportunities are outlined below:

- With the mill operating, exploration success for Echo can be monetised in the short, near and long term. The cash generated by the project can be utilised for this exploration over a large prospective ground holding in one of the most prospective greenstone belts of Australia.
- Potential to improve project economics by saving in operating cost and schedule timing. For example increasing mill treatment rate will lower unit costs and shorten the processing schedule without sacrificing recovery.



- Review of the Julius resource model vs the mining model giving consideration to cut and uncut grades suggests that with careful grade control and mining practices there is potentially an additional 10,000 ounces of gold which may be realised. Any additional ounces will significantly improve the financial result.
- Infill drilling to the North of the planned Julius open pit has high potential of leading to an increase in the reserve and subsequent mine life and profitability. This has been highlighted by results of the pit optimisation and limited drilling in key locations of the potential northern extension.
- Various low grade stockpiles exist on project tenements that may provide further economic mill feed.
- The project funds an operating mill creating opportunity for reassessment of the various historic mines on the tenements under current gold price and operating cost regimes. A number of advanced resources lie within a 15 kilometre radius of the Bronzewing plant and these will be closely reviewed with the aim of adding reserves and mine life with minimal expenditure.
- An operational mill in the region provides strategic value for Echo. It provides a processing route for other resources in the district with potential leverage for Echo in the development of those resources.
- Bronzewing mill capacity is only at 50% for the project life, providing opportunity for toll milling which will have the twofold effect of spreading fixed costs thus lowering Julius production cost and generating revenue from milling fees.

#### 1.14.2 Risk

The overall project risk can be considered low both from a technical and financial outlook. Material risks considered along with mitigating circumstances are considered as follows:

- Gold price risk- the project NPV has greatest sensitivity to fluctuations in gold price, however the project has healthy margin and hedging could be utilised to manage the risk.
- Geological risk- the geology is well understood, the resource model has been internally and externally reviewed, and conservative cut off grades used. In excess of 50% of the reserve is contained within the overlying flat Laterite orebody and represents the lowest risk type of orebody in regards to mining and treatment.
- Metallurgical Risk – standard metallurgical testwork revealed straight forward gold recovery, the Bronzewing plant flowsheet matches the optimum design.
- Opex risk – sensitivity analysis shows the project can accommodate reasonably large percentage increases in operating cost. The BFS estimates were developed from reputable contractor estimation and cross referenced with similar projects so are unlikely to vary significantly.
- Capex risk – the major capital expenditure item is the refurbishment of the Bronzewing plant. The scope developed for the estimate considered refurbishment to a standard that would provide a treatment plant mechanical availability of 95% and an operating life greater than the 15 month processing life of the project. As such the capital spend can be managed to prevent overspend whilst still allowing plant commissioning and production. Major insurance spares exist which will prevent extended downtime.

## Appendix 3: Cautionary and Competent Persons Statements

### Forward Looking Statements and Disclaimers

This announcement is for information purposes only and does not constitute a prospectus or prospectus equivalent document. It is not intended to and does not constitute, or form part of, an offer, invitation or the solicitation of an offer to purchase or otherwise acquire, subscribe for, sell or otherwise dispose of any securities, or the solicitation of any vote or approval in any jurisdiction, nor shall there be any offer, sale, issuance or transfer of securities in any jurisdiction in contravention of any applicable law.

This announcement contains forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions. The forward looking statements in this announcement are based on current expectations, estimates, forecasts and projections about Echo and Metaliko and the industry in which they operate. They do, however, relate to future matters and are subject to various inherent risks and uncertainties. Actual events or results may differ materially from the events or results expressed or implied by any forward looking statements. The past performance of Echo or Metaliko is no guarantee of future performance. None of Echo, Metaliko or any of their directors, officers, employees, agents or contractors makes any representation or warranty (either express or implied) as to the accuracy 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.

You are cautioned not to place undue reliance on any forward looking statement. The forward looking statements in this announcement reflect views held only as at the date of this announcement.

### No New Information or Data

This report contains references to Mineral Resource estimates, which have been cross referenced to previous market announcements made by Echo and Metaliko. Echo and Metaliko confirm they are not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

### Competent Persons Statements

The information in this report relating to Julius Resource Estimation is based on information compiled by Mr Lynn Widenbar, a consultant of Echo Resources Limited, who is a member of the Australasian Institute of Mining and Metallurgy. The information in this announcement that relates to Exploration Results and metallurgical considerations at Julius is based on information compiled by Simon Coxhell, a Director of Echo Resources and a member of the Australasian Institute of Mining and Metallurgy. Both have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that they are 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 Widenbar and Mr Coxhell consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report relating to Echo's exploration activities and exploration potential at Julius and Metaliko's Cockburn, Woorana North, Woorana South, Fat Lady and Mt Joel Mineral Resource estimates is based on information compiled by Mr Simon Coxhell, a Director of Echo Resources Limited, who is a member of the Australasian Institute of Mining and Metallurgy. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that 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 Coxhell consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report relating to Echo's Regional Mineral Resource estimates is based on information compiled by Stephen Godfrey, a full-time employee of the independent geological consulting group Golder Associates Pty Ltd. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Godfrey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report relating to Metaliko's Corboys Deposit Mineral Resource estimate is based on information compiled by Andrew James Hawker, a Competent Person who is a Member or Fellow of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Hawker is the Principle Geologist employed by HGS Australia. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that 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 Godfrey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report relating to the Julius Gold Deposit Mineral Resource estimation is based on information compiled by Mr Steve Hyland, a consultant of Echo Resources Limited, who is a member of the Australasian Institute of Mining and Metallurgy. Mr Hyland has sufficient experience that is relevant to the style of mineralisation and type of deposit under

consideration and to the activity that 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 Hyland consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report that relates to Ore Reserves for the Julius Gold Deposit is based on information compiled by Mr Gary McRae of Minecomp Pty Ltd, a member of the Australasian Institute of Mining and Metallurgy and is a consultant to Echo Resources Limited. The information was prepared under the JORC Code 2012. Mr McRae has sufficient experience that is relevant to the style of mineralisation, type of deposit under consideration and to the activity that 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 McRae consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

#### **Previously Reported Information<sup>6</sup>**

This announcement includes information that relates to Mineral Resources and Exploration Results which were prepared under JORC Code (2012). This information was included in the Company’s previous announcements as follows:

- ASX announcement dated 16 May 2016, Julius Gold Deposit – High Grade Near Surface Drill Results
- ASX announcement dated 27 May 2016, Further High Grade Gold Results at Julius
- ASX announcement dated 21 July 2016, Julius Bankable Feasibility Study and Drilling Update
- ASX announcement dated 16 August 2016, Julius Metallurgical Testwork Delivers Excellent Results
- ASX announcement 22 August 2016, Excellent High Grade Infill Drill Results at Julius
- ASX announcement 16 September 2016, Further High Grade Results Boost Resource Outlook for Julius
- ASX announcement 26 October 2016, Further Excellent Results North of Julius
- ASX announcement 23 November 2016, Julius Gold Resource Grows

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<sup>6</sup> As announced to the ASX on dates shown, see also Qualification and Competent Persons Statements

# Appendix 4: JORC Code (2012) Tables

## Julius Gold Deposit

### JORC Code, 2012 Edition

## 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 (e.g. 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 (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>2006-2015 Drilling at Julius has comprised a total of 225 RC holes for 27.703 metres, 32 aircore holes for 1529 meters and 6 diamond holes for 1262 metres.</li> <li>More Recent exploration at the Julius Gold Deposit comprised aircore drilling of 67 holes for 2,879 metres, 53 RC holes for 5113 metres and 9 HQ triple tube diamond holes for 481 metres. Approximately 2-4kg of sample was collected from each metre for analysis by riffle splitting of the aircore sample interval collected via the rig cyclone. Onboard cone splitter for the RC and half diamond core for the HQ drilling.</li> <li>Samples were 2 kilogram samples from the drill spoils collected. Drill hole collar locations were recorded by handheld GPS survey with accuracy +/-2 metres.</li> <li>Analysis was conducted by submitting the 2kg sample whole for preparation by crushing, drying and pulverising at Nagrom Laboratories for gold analysis via Fire Assay/ICP.</li> <li>A number of 4 metre composites were also collected in areas outside of the interpreted mineralised intervals.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Aircore drilling (4 inch), predominantly blade bit with hammer at the bottom of a number of holes, as required below the base of oxidation (&gt;50 metres vertical depth).</li> <li>RC drilling (5 ¼ inch face sampling hammer) from surface</li> <li>HQ Triple Tube from surface (78 mm)</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul style="list-style-type: none"> <li>Drill sample returns as recorded were considered excellent .</li> <li>There is insufficient data available at the present stage to evaluate potential sampling bias.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Drill chip logging is a qualitative activity with pertinent relevant features recorded: lithology, mineralogy, mineralisation, structural, weathering, alteration, colour and other features of the samples.</li> <li>Rock chip boxes of all sample intervals were collected. All samples were logged.</li> <li>HQ core was logged in detail, photographed wet and dry, RQDs, structural measurements on all completed. Core was orientated where possible.</li> <li>All drilling was logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>HQ diamond core was sent to ALS where it was sawn in half along orientation lines or cut lines marked by the geologist in the field.</li> <li>Sample preparation for all recent samples follows industry best practice and was undertaken by Nagrom Laboratories in Perth where they were crushed, dried and pulverised to produce a sub sample for analysis.</li> <li>Sample preparation involving oven drying, fine crushing to 95% passing 4mm, followed by rotary splitting and pulverisation to 85% passing 75 microns.</li> <li>QC for sub sampling follows Nagrom procedures.</li> <li>Field duplicates were taken at a rate of 1:30.</li> <li>Blanks were inserted at a rate of 1:30</li> <li>Standards were inserted at a rate of 1:30.</li> <li>Sample sizes are considered appropriate to the grain size of the material being sampled.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the</li> </ul>	<ul style="list-style-type: none"> <li>The methods are considered appropriate to the style of mineralisation. Extractions are considered near total.</li> <li>No geophysical tools were used to determine any element concentrations at this stage.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Laboratory QA/QC involves the use of internal lab standards using certified reference material, blanks, splits and duplicates as part of the in house procedures. Repeat and duplicate analysis for samples shows that the precision of analytical methods is within acceptable limits.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>The Company's Geologist has visually reviewed the samples collected.</li> <li>4 HQ diamond twin holes drilled</li> <li>Data and related information is stored in a validated Mapinfo or Micromine database. Data has been visually checked for import errors.</li> <li>No adjustments to assay data have been made.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>All drillholes have been located by DGPS with precision of sample locations considered +/-1m.</li> <li>Location grid of plans and cross sections and coordinates in this release 2016 samples use MGA94, Z51 datum.</li> <li>Topographic data was assigned based on a DTM of the Julius opening surface..</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The holes are nominally spaced on a 10-20 metre (E-W spacing) with hole spacing along each section ranging from 10-20 metres spacing along each section line.</li> <li>Data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for Mineral Resource estimation procedures.</li> <li>Sample compositing has occurred on a small number of samples (4 metre composite samples) outside of the interpreted main mineralized zone. .</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>The orientation of sampling is considered adequate and there is not enough data to determine bias if any.</li> <li>Mineralised outcrop strikes north-north-east. Drilling was orthogonal to this apparent strike and comprised vertical drill holes. The flat lying laterite also trends in this orientation and the vertical drilling completed is considered entirely appropriate for this style of mineralization.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Chain of custody is managed by the Company and samples are transported to the laboratory via Company staff with samples safely consigned to Nagrom for preparation and analysis. Whilst in storage, they are kept in a locked yard. Tracking sheets are used track the progress of batches of samples.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No review or audit of sampling techniques or data compilation has been undertaken at this stage.</li> </ul>

## Section 2 Reporting of Exploration Results

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 Julius Gold Deposit is located within E53/1042 located in the northern Yandal Greenstone Belt and is 100% owned by Echo Resources Ltd. The tenement is located in the Wiluna Native Title Claim Group (WC99/24). Newmont Yandal Operations has the right to buy back a 60% interest in any gold discovery containing aggregate Inferred Mineral Resources of at least 2 million ounces of gold. A third party net smelter royalty of 1.5% applies in respect of all minerals produced from the tenement.</li> <li>The tenement is in good standing</li> <li>No impediments to operating on the permit are known to exist.</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 Julius deposit area was initially located by Newmont based on shallow results. Echo Resources subsequently completed RC drilling which defined the extent of the resource as understood today.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Julius Gold Deposit consists of a flat lying gold rich laterite zone which is located between 10-15 metres vertical depth and overlain by indurated barren transported sands and silts. . This is underlain by clay rich supergene gold mineralisation and at depth primary gold mineralization associated with silica, quartz veining and sulphide development. The mineralisation is largely focused on a shallow west-northwest dipping granite/greenstone contact (principally ultramafic lithologies).</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>2006-2015 Drilling at Julius has comprised a total of 225 RC holes for 27.703 metres, 32 aircore holes for 1529 meters and 6 diamond holes for 1262 metres.</li> <li>More recently (2016) a total of 67 aircore drillholes for 2879 metres, 53 RC holes for 5113 metres and 9 HQ triple tube holes for 481 metres were drilled on a global nominal 10-20 metre centres, focused on the mineralized contact zone and laterite gold mineralized zone in the vicinity of the granite-greenstone contact. Full drillhole details for the results received to date have been previously provided in various ASX announcements along with appropriate maps and plans.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>No averaging or aggregation techniques have been applied.</li> <li>No top cuts have been applied to exploration results.</li> <li>No metal equivalent values are used in this report.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>The orientation or geometry of the mineralised zones strikes in a north-northeastly direction and dips in a shallow manner to the west-northwest. The laterite is flat lying and overlies this contact zone, with the drilling largely interpreted to be orthogonal to strike.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate maps are included in main body of report with gold results and full details are in the tables reported.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>All results for the target economic mineral being gold have been reported.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	<ul style="list-style-type: none"> <li>Previous work by Echo has highlighted a gold resource of 4Mt @ 1.69 g/t Au at Julius. Metallurgical work suggests excellent gold recoveries are likely through a conventional CIP/CIL gold plant. There are at least two of these in the district within trucking distance of Julius.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Future RC, diamond and aircore drilling is being considered to further evaluate the Julius Gold Deposit.</li> <li>Refer to maps in main body of report for potential target areas.</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
<b>Database integrity</b>	<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>Data was provided as a validated Micromine Database and was digitally imported into Micromine software. Validation routines were run to confirm validity of all data.</li> <li>Analytical results have all been electronically merged to avoid any transcription errors.</li> </ul>
<b>Site visits</b>	<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>No site visit has been undertaken by the Competent Person, as little relevant information is available on site and the Competent Person is familiar with the type of gold deposit under consideration. Diamond core and aircore and RC chip boxes have been reviewed. Drilling techniques and methods have been reviewed.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Geological interpretation</i>	<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>The confidence in the geological interpretation is very good, with the latest infill drilling allowing a detailed interpretation.</li> <li>Geological logging and interpretation allows extrapolation of drill intersections between adjacent sections.</li> <li>Alternative interpretations would result in similar tonnage and grade estimation techniques.</li> <li>Geological boundaries are determined by the spatial locations of the various mineralised structures.</li> <li>Flat lying laterite gold mineralisation confined to individual wireframes, supergene and fresh material individually assessed. Oxidation profiles established and assigned into the model.</li> </ul>
<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>The lateral dimensions of the resources at Julius are shown in the diagrams in the body of this release. The mineralisation dips shallowly (maximum 30-45°) but variably to the west as shown in diagrams in the body of this release, and ranges from 6m to 30m thick. A shallow plunge to the northwest is suggested based on drilling to date. The resource extends over approximately 850 metres of strike and extends to a vertical depth of 250 metres. .</li> </ul>
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>Grade estimation using an Ordinary Kriging methodology has been applied to all Resources. A series of wireframes has been used to subset and constrain the data points used in the interpolation and only individual grades from individual wireframes were used.</li> <li>Variography was carried out on four major zones to define the variogram models for Ordinary Kriging interpolation.</li> <li>All estimation was carried out in Micromine 2016 (64-bit SP3) software.</li> <li>The block models were constructed using a 5m (E) by 10m (N) by 2.5m (Z) block size, constrained by a series of individual wireframes, with sub-cells to 1m x 1m x 0.5m to accurately represent wireframe shapes.</li> <li>Block size is generally half the sample spacing or greater in areas of infill drilling, and typically one quarter in wider spaced drilling areas.</li> <li>No deleterious elements have been identified</li> <li>No assumptions regarding recovery of byproducts have been made</li> <li>An unfolding (or flattening) methodology has been used in the interpolation; this obviates the need for varying search ellipses with dip, with all searches being horizontal, and oriented along the strike direction of each mineralised zone.</li> <li>Search ellipsoids use multiple passes to ensure blocks are filled in areas with sparser drilling. Sizes of searches are based on Kriging Neighbourhood Analysis and are covered in detail in the body of the accompanying report.</li> <li>Sample data was composited to 1m down-hole composites, while honouring breaks in mineralised zone interpretation.</li> <li>The geological interpretation follows a shallow dipping contact zone between a granite to the east and an ultramafic/mafic to the west. Strong shearing accompanies the contact and gold mineralisation.</li> <li>Geological interpretation was carried out of the mineralised zones; consistent, generally shallow-dipping mineralised structures with 1-12m true thickness were interpreted.</li> <li>Top cut analysis was carried out on each mineralised zone, using a combination of inflection points on log probability plots, outliers on log histograms and the effect of top cuts on cut mean and coefficient of variation.</li> <li>Validation was carried out in a number of ways, including <ul style="list-style-type: none"> <li>Visual inspection section, plan and 3D</li> <li>Swathe plot validation</li> <li>Model vs composite statistics</li> <li>ID2 vs OK model checks</li> </ul> </li> </ul>
<i>Moisture</i>	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal downhole cut-off of 0.5 g/t Au has been used to define the mineralised zones. The basis of the 0.5 g/t Au cutoff is an economic analysis coupled to mining dilution considerations. The cut-off corresponds reasonably well with the mineralised shear zone contact zone between the mafic and granite contact.</li> </ul>
<i>Mining factors or assumptions</i>	<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</li> </ul>	<ul style="list-style-type: none"> <li>The resources defined to date would potentially be amenable to simple open pit mining.</li> <li>The shallow dip of the mineralisation, coupled to the extensive near surface laterite mineralisation lends itself to open pit mining with a relatively low stripping ratio.</li> </ul>

Criteria	JORC Code explanation	Commentary														
	<i>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.</i>															
Metallurgical factors or assumptions	<ul style="list-style-type: none"><li><i>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.</i></li></ul>	<ul style="list-style-type: none"><li>Preliminary metallurgical testwork has suggested excellent gold recoveries, via conventional CIP/CIL gold treatment.</li><li>Test work to date has shown that the gold mineralisation is amenable to conventional recoveries via gravity and leaching with approximately 33.2% of the total gold content recovered via gravity separation and mercury amalgamation.</li><li>A very high total gold recovery of 98.6% was achieved.</li><li>The gold extraction was very fast with 95.4% of the gold recovered by gravity separation followed by only 2 hours of cyanide leaching.</li></ul>														
Environmental factors or assumptions	<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>Environmental studies have been completed and a Mining Proposal is well advanced. The general Yandal area is well known for gold mining and no environmental impediments are expected.</li></ul>														
Bulk density	<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/specific gravity have been assigned based on testwork (Archimedes Method) of material of various geological and mineralisation types. The following densities are applied to the resource model.<table border="1"><thead><tr><th>Material</th><th>Density</th></tr></thead><tbody><tr><td>Fresh Mineralised</td><td>2.6</td></tr><tr><td>Transition Mineralised</td><td>2.4</td></tr><tr><td>Oxide Mineralised</td><td>1.8</td></tr><tr><td>Silcrete Domain</td><td>2.2</td></tr><tr><td>Laterite Mineralised</td><td>2.4</td></tr><tr><td>Waste &gt; 500m RL</td><td>2.1</td></tr></tbody></table></li><li>ALS completed the Bulk Density determinations based on weight in water/weight in air, after wax coating of the diamond core samples.</li><li>Base of oxidation, top of fresh and a silcrete digital terrain models were constructed and assigned into the block model, for both waste and ore.</li></ul>	Material	Density	Fresh Mineralised	2.6	Transition Mineralised	2.4	Oxide Mineralised	1.8	Silcrete Domain	2.2	Laterite Mineralised	2.4	Waste > 500m RL	2.1
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Classification	<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>The Mineral Resources have been classified as Measured, Indicated and Inferred based on the drill spacing and geological continuity at the various deposits.</li><li>The Resource model uses a classification scheme based upon drill hole spacing plus block estimation parameters, including kriging variance, number of composites in search ellipsoid informing the block cell and average distance of data to block centroid.</li><li>The results of the Mineral Resource Estimation reflect the views of the Competent Person.</li></ul>														
Audits or reviews	<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>Echo Resources personnel have reviewed the block model relative to the drilling data and considers the estimate to be an accurate reflection of the gold mineralisation at Julius.</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 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</i></li></ul>	<ul style="list-style-type: none"><li>The relative accuracy of the Mineral Resource is reflected in the reporting of the Mineral Resource as being in line with the guidelines of the 2012 JORC.</li><li>The statement relates to global estimates of tonnes and grade, with reference made to resources above a certain cut-off that are intended to assist mining studies.</li><li>No production data is available for comparisons.</li></ul>														

Criteria	JORC Code explanation	Commentary
	<p>confidence of the estimate.</p> <ul style="list-style-type: none"> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	

## Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant 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>	<ul style="list-style-type: none"> <li>The SMU Mineral Resource for the Julius Deposit has been estimated in September 2016. The Ore Reserve has been determined using this model.</li> <li>The Mineral Resource is inclusive of the Ore Reserves</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A site visit was not undertaken by the Competent Person</li> <li>A site visit would not materially affect the determination of the Reserve</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 feasibility study has been carried out appropriate to the deposit type, mining method and scale. The study was carried out internally and externally using consultants where appropriate.</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>Cut-off is calculated as part of the mine optimisation evaluation and is 0.82 g/t gold above the 490m RL horizon and 0.84g/t gold below the 490m RL horizon.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>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).</li> <li>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.</li> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>The mining dilution factors used.</li> <li>The mining recovery factors used.</li> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource model incorporated SMU of 5m (N-S), 2.5m (E-W) and 2.5m (Vertical). These SMU comprised mineralised and waste material with SMU grades adjusted accordingly.</li> <li>Mining method is conventional open-pit with drill and blast, excavate, load and haul.</li> <li>An external geotechnical report provided pit slopes and recommended inputs for pit design.</li> <li>SMU represent a recoverable resource model. Therefore no additional mining dilution was applied.</li> <li>SMU represent a recoverable resource model. Therefore a mining recovery factor of 100% was applied.</li> <li>SMU are based upon a minimum mining width. This width was 2.5m.</li> <li>Inferred Resources were not used or included in optimisation or final designs</li> <li>Infrastructure required is small and of a temporary nature, i.e. workshop, offices, fuel tank, generator, magazine and water transfer dam</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> </ul>	<ul style="list-style-type: none"> <li>Processing will take place at the Bronzewing Mill using conventional Gravity &amp; CIL methods. Gravity &amp; CIL is most suited to this style of mineralisation.</li> <li>Well-tested existing metallurgical technology</li> <li>A number of metallurgical test work programs have been completed over time. These programs have included gravity concentration, cyanide</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	<p>leach and grind establishment The most comprehensive of these by Nagrom indicated gold recoveries for oxide, transitional and fresh ore in excess of 96%</p> <ul style="list-style-type: none"> <li>No deleterious elements are present.</li> <li>No bulk sample testwork has been carried out</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>A Mining Proposal, Mine Closure Plan and Clearing permit has been submitted to the DMP and is pending approval.</li> <li>Waste rock is typically non-acid forming.</li> <li>No tailings will be stored on site.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Infrastructure at site is minimal and consists of a small scale camp and access roads and tracks</li> <li>Flights will use established facilities at Wiluna with accommodation based at the Bronzewing minesite. An additional small-scale camp will be established at Julius.</li> </ul>
Costs	<ul style="list-style-type: none"> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs based on contractor quotes. These include the upgrading of 72km of the Barwidgee/Yandal Road to a standard suitable for ore haulage to the Bronzewing Mill.</li> <li>Operating costs based on contractor quoted costs for load and haul and drill and blast and other mining costs.</li> <li>No deleterious elements present.</li> <li>Cost models use Australian dollars</li> <li>Ore haulage rates based on quoted contractor rates</li> <li>Treatment costs based on estimated milling costs by an independent party. No penalties or specifications</li> <li>State royalty of 2.5% and a Third Party royalties of 2.2% have been applied</li> </ul>
Revenue factors	<ul style="list-style-type: none"> <li>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.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	<ul style="list-style-type: none"> <li>Gold price of Au\$1,600/oz used in the study.</li> </ul>
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>Gold doré will be sold at the Perth Mint as it is produced.</li> <li>Market window unlikely to change</li> <li>Price is likely to go up, down or remain same</li> <li>Not an industrial mineral</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>No NPV applied</li> <li>Project is relatively short life at &lt;15 months</li> <li>Sensitivity analyses have been completed</li> </ul>
Social	<ul style="list-style-type: none"> <li>The status of agreements with key stakeholders and matters leading to social license to operate.</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders have been consulted</li> <li>Land Access Native Title Agreement and State Deed has been signed.</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> </ul>	<ul style="list-style-type: none"> <li>A risk review has been completed. No material risks are identified.</li> <li>A Land Access Native Title Agreement and State Deed have been signed.</li> <li>A Mining Proposal, Mine Closure Plan and Clearing permit has been submitted to the DMP and is pending approval.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <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>Discussions are ongoing with regards the most favorable ore haulage route.</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>Reserves are classified according to Resource classification</li> <li>They reflect the Competent Person's view</li> <li>90% of Probable Ore Reserves have been derived from Measured Mineral</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Ore Reserve estimates.</li> </ul>	<ul style="list-style-type: none"> <li>No audits carried out</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the 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.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Confidence is in line with gold industry standards and the company's aim to provide effective prediction for current and future mining projects. No statistical quantification of confidence limits has been applied</li> <li>Estimates are global</li> <li>Reserve confidence is reflected by the Probable category applied, which in turn reflects the confidence of the Mineral Resource.</li> <li>No modern production data is available for comparison</li> </ul>