

# ASX Announcement

17 April 2019

[www.evolutionmining.com.au](http://www.evolutionmining.com.au)

## ANNUAL MINERAL RESOURCES AND ORE RESERVES STATEMENT

***Demonstrating the immense potential of the world-class Cowal deposit with resource growth at Cowal of more than 1.3 million ounces including an increase of 808,000 ounces in the underground resource***

Evolution Mining Limited (ASX: EVN) is pleased to release its annual Mineral Resources and Ore Reserves (MROR) estimates as at 31 December 2018. The Company remains committed to operating a sustainable business that prospers through the cycle and has used an unchanged and conservative gold price assumption of A\$1,350 per ounce (US\$980/oz)<sup>1</sup> and a copper price assumption of A\$6,000 per tonne (US\$4,350/t) to estimate Group Ore Reserves.

### Highlights

- **Group Mineral Resources**
  - Gold Mineral Resources **increased by 480,000 ounces to 14.73 million ounces<sup>2</sup>** after accounting for mining depletion of 902,000 ounces
    - Driven by an addition at Cowal of 1.34 million ounces post mining depletion which includes an increase of 808,000 ounces in the Cowal underground resource to 1.41 million ounces
  - Copper Mineral Resources **increased by 36,000 tonnes to 982,000 tonnes** after accounting for mining depletion
- **Group Ore Reserves**
  - Gold Ore Reserves **increased by 410,000 ounces to 7.46 million ounces<sup>2</sup>** after accounting for mining depletion of 902,000 ounces
    - Driven by an addition at Cowal of 834,000 ounces post mining depletion due to the inclusion of the E41, E46 and GRE open pits and an In-Wall Ramp at E42
  - Copper Ore Reserves **decreased by 26,000 tonnes to 538,000 tonnes** after accounting for mining depletion

### Growth opportunities

- Resource definition and extensional drilling at Cowal's GRE46 and Dalwhinnie from the underground exploration decline and from surface
- Further delineation and conversion of the significant mineral endowment on Cowal's mining lease including E41, E42 and E46
- Regional opportunities within the Cowal Province including exploration drilling east of the mine to delineate the edges of the Cowal mineral system, 15km west of the mine at East Girral, and the potential for the discovery of porphyry copper-gold deposits
- Planned extensional drilling below the 1,200m level at Ernest Henry commencing in the December 2019 quarter
- Advancing the Mungari provincial pipeline and continuation of the near-mine drilling programs
- Underground extensional drilling at Mt Carlton and exploration drilling at nearby target Mt Carlton United
- Discovery potential at Connors Arc, Drummond and Murchison greenfields exploration projects

1. Using an AUD:USD exchange rate of 0.725

2. Inclusive of the interim Mineral Resource and Ore Reserve update at Castle Hill (Mungari) entitled "Restructure of Ownership of Castle Hill Gold Deposit" released to ASX on 18 July 2018 available to view at [www.evolutionmining.com.au](http://www.evolutionmining.com.au)

Commenting on the updated Mineral Resources and Ore Reserves estimate, Evolution Executive Chairman, Jake Klein, said:

*“It is very pleasing that the discovery team, led by Glen Masterman, is continuing to deliver meaningful organic growth through exploration.*

*We have once again added to both our resources and reserves after accounting for mining depletion. A continued focus on extending our average mine life has resulted in further year-on-year improvements with the average Group reserve life now approximately ten years.*

*The growth in resources and reserves at Cowal has been exceptional and we are also building a strong pipeline of greenfields projects which aim to generate long-term growth for our business.”*

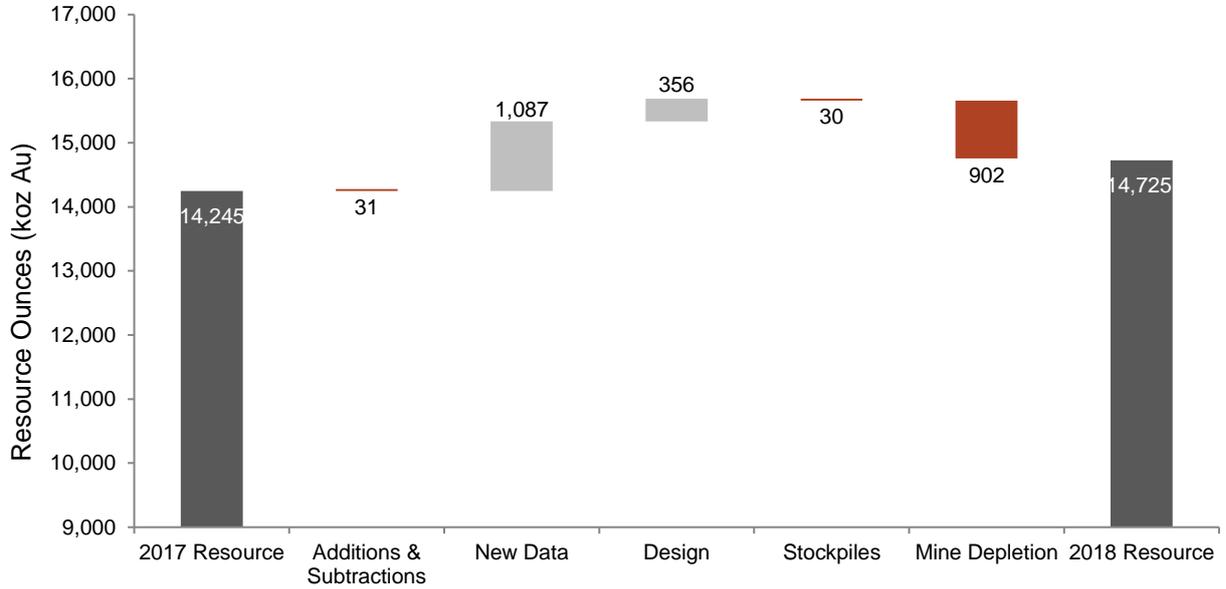
**Group Mineral Resources** as at 31 December 2018 are estimated at **14.73 million ounces of gold** and **982,000 tonnes of copper** compared with the estimate at 31 December 2017 of 14.24 million ounces of gold and 946,000 tonnes of copper. The updated estimate accounts for mining depletion in 2018 of 902,000 ounces of gold. All Mineral Resources are constrained at an A\$1,800/oz economic threshold at Evolution’s 100% owned assets.

Changes to the Group Mineral Resources estimate include:

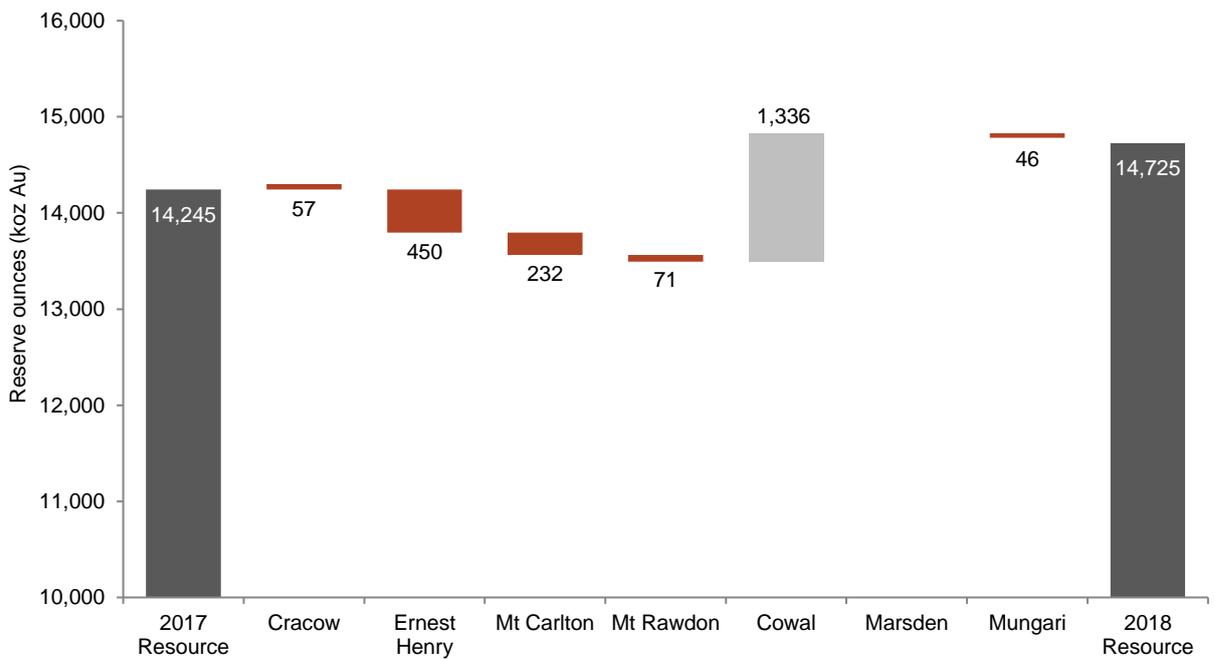
- Additions prior to mining depletion:
  - 1.64 million ounces of gold at Cowal including:
    - Addition of 808,000 ounces to the underground resource following successful GRE46 extensional drilling and the discovery of the Dalwhinnie lode
    - Addition of 386,000 ounces due to the addition of E41 open pit and the inclusion of an In-Wall Ramp (IWR) to access ore below the stage H pit shell at E42
  - 91,000 gold ounces at Mungari
  - 54,000 gold ounces at Mt Rawdon
  - 43,000 gold ounces at Cracow
  - 76,000 tonnes copper at Ernest Henry due to a change in reporting to include 49% of the copper resource below the 1,200RL (previously 30% copper)
- Decreases prior to mining depletion:
  - 294,000 gold ounces at Ernest Henry due to a change in reporting to include 49% of the gold resource below the 1,200RL (previously 100%). This is more than offset by the addition to the copper resource (as stated above)
  - 117,000 gold ounces at Mt Carlton reflecting the impact of the increase in the underground resource reducing the potential to optimise the open pit resource

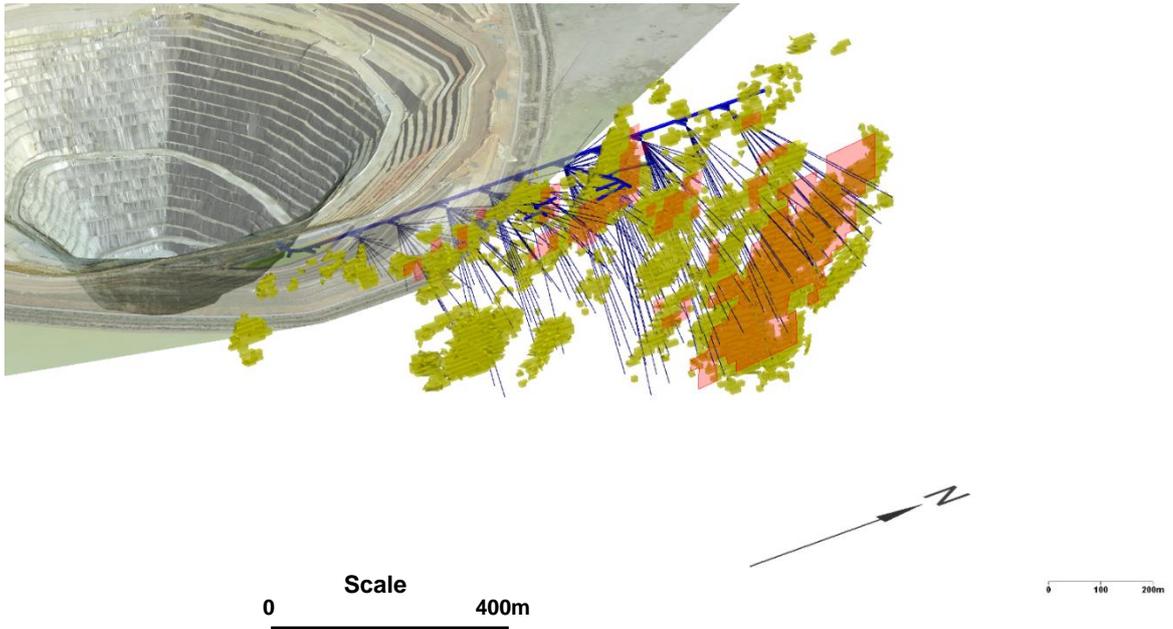
The Group Mineral Resource Statement as at 31 December 2018 is provided below in Tables 1 and 3. Mineral Resources are reported inclusive of Ore Reserves and include all exploration and resource definition drilling information up to 31 December 2018 and have been depleted for mining to 31 December 2018.

**Group Gold Mineral Resource changes  
December 2017 to December 2018**



**Group Gold Resource Net Changes Post Mining Depletion  
December 2017 to December 2018**





**Section of Cowal GRE46 underground area. Orange shows the outline of the December 2017 mineable shape optimiser (MSO) outlines and yellow shows the December 2018 MSO outlines. Planned drilling from the exploration decline is shown in blue**

The December 2018 GRE46 underground resource is reported at a 2.0g/t cut-off grade recording a slight increase in the average grade to 3.24g/t Au (from 3.0g/t cut-off grade and 3.17g/t Au average grade in the December 2017 MROR update). The impact of discovery of the Dalwhinnie mineralisation, along with an improved understanding of mineralisation controls, has significantly increased the average grade of the resource from 3.17g/t Au to 4.52g/t Au above a 3.0g/t Au cut-off grade.

Cut-off (g/t)	Tonnes (Mt)	Grade Au (g/t)	Metal Au (koz)
1.5	22.74	2.64	1,927
<b>2.0</b>	<b>13.55</b>	<b>3.24</b>	<b>1,411</b>
2.5	8.33	3.85	1,031
3.0	5.17	4.52	751

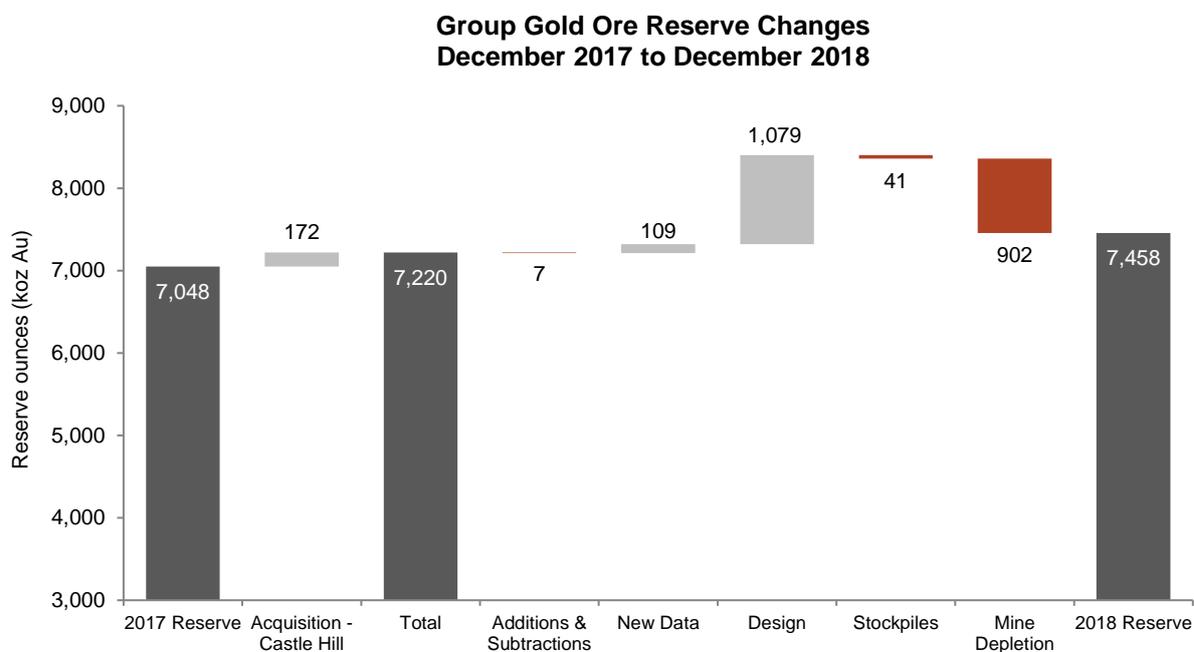
**Cowal Underground Inferred Mineral Resource reported at various cut-off grades**

**Group Ore Reserves** as at 31 December 2018 are estimated at **7.46 million ounces of gold** and **538,000 tonnes of copper** compared with the 31 December 2017 estimate of 7.05 million ounces of gold and 564,000 tonnes of copper after accounting for mining depletion of 902,000 ounces of gold.

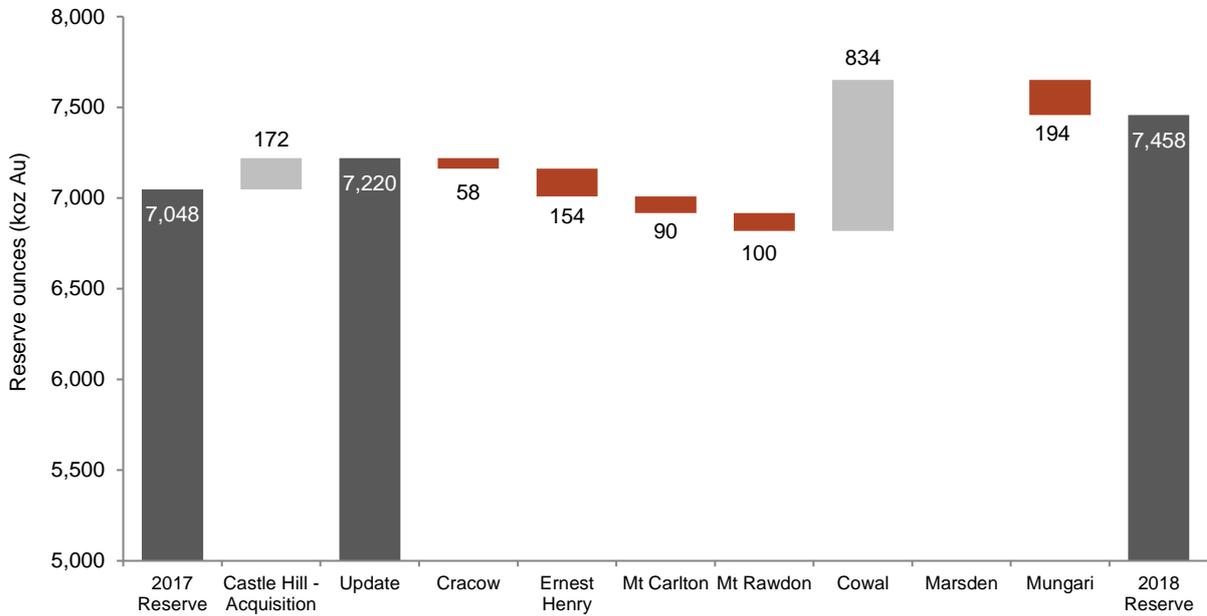
Changes to the Group Ore Reserves estimate include:

- Additions prior to mining depletion:
  - 1,136,000 gold ounces at Cowal due to inclusion of the E41, E46 and Galway-Regal open pits and an increase at the E42 open pit due to modelling an In-Wall Ramp which unlocks additional reserves below the Stage H pit shell
  - 44,000 gold ounces at Cracow
  - 25,000 gold ounces at Mt Carlton
  - 24,000 gold ounces at Mt Rawdon
- Decreases prior to mining depletion of 59,000 gold ounces at Mungari due to new drill data leading to an improved understanding of regional ore reserves

The Group Ore Reserve Statement as at 31 December 2018 is provided in Tables 2 and 4.



**Group Gold Ore Reserve Changes  
December 2017 to December 2018**



**Waterfall Chart definitions**

*Additions & Subtractions*

This is material that lies outside of the current Resource and Reserve base at each site but was mined during the year. It also includes Resources and Reserves that were not recovered due to misclassification errors.

*New Data*

This occurs where change in the Resource and Reserve base is driven by a change in the either the methodology or interpretation of the resource estimate and incorporates the impact of new drilling data on the model.

*Design change*

This occurs where a change in the input parameters used to generate the Reserve estimate are modified from the previous year and this impacts on the generation of either the A\$1,800/oz optimised shells used to constrain Resources for reporting, or the engineered pit or stope design used to constrain Reserves for reporting.

*Stockpile*

This captures the net change to stockpiled material at each site in the twelve-month reporting period.

*Mine depletion*

This is the Declared Ore Produced figure for each site reflecting what the mill has claimed for the year prior to processing.

### **Commodity Price Assumptions**

Commodity price assumptions used to estimate the December 2018 Mineral Resources and Ore Reserves are unchanged for gold, copper and silver to those used previously (December 2017 Mineral Resources and Ore Reserves). The A\$1,350/oz gold price assumption used to estimate Ore Reserves has been unchanged since 2012.

- Gold: A\$1,350/oz for Ore Reserves, A\$1,800/oz for Mineral Resources
- Silver: A\$20.00/oz for Ore Reserves, A\$26.00/oz for Mineral Resources
- Copper: A\$6,000/t for Ore Reserves, A\$9,000/t for Mineral Resources

### **JORC 2012 and ASX Listing Rules Requirements**

The Mineral Resources and Ore Reserves statement included with this announcement has been prepared in accordance with the 2012 Edition of the “Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves” (the JORC Code 2012) for all projects.

Group Mineral Resources and Ore Reserves summaries are tabulated on the following pages. A material information summary is also provided for the Cowal Mineral Resource and Ore Reserve pursuant to ASX Listing Rules 5.8 and 5.9 and the Assessment and Reporting Criteria in accordance with JORC Code 2012 requirements.

### **For further information please contact:**

#### **Investor Enquiries**

Bryan O’Hara  
Group Manager Investor Relations  
Evolution Mining Limited

Tel: +61 (0)2 9696 2900

#### **Media Contact**

Michael Vaughan  
Media Relations  
Fivemark Partners

Tel: +61 (0)422 602 720

### **About Evolution Mining**

Evolution is a leading, growth-focussed Australian gold miner. Evolution operates five wholly-owned mines – Cowal in New South Wales; Mt Carlton, Mt Rawdon, and Cracow, in Queensland; and Mungari in Western Australia. In addition, Evolution holds an economic interest in the Ernest Henry copper-gold mine that will deliver 100% of future gold and 30% of future copper and silver produced from an agreed life of mine area. Outside of this life of mine area Evolution will have a 49% interest in future copper, gold and silver production at Ernest Henry.

FY19 Group gold production guidance is 720,000 – 770,000 ounces at an AISC of A\$850 – A\$900 per ounce.

## Competent Persons Statement

The information in this statement that relates to the Mineral Resources and Ore Reserves listed in the table below is based on, and fairly represents, information and supporting documentation prepared by the Competent Person whose name appears in the same row, who is employed on a full-time basis by Evolution Mining Limited and is a Member or Fellow of the Australasian Institute of Mining and Metallurgy and consents to the inclusion in this report of the matters based on their information in the form and context in which it appears. Each person named in the table below has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the JORC Code 2012.

Evolution employees acting as a Competent Person may hold equity in Evolution Mining Limited and may be entitled to participate in Evolution's executive equity long-term incentive plan, details of which are included in Evolution's annual Remuneration Report. Annual replacement of depleted Ore Reserves is one of the performance measures of Evolution's long-term incentive plans.

Activity	Competent Person
Cowal Mineral Resource	James Biggam
Cowal Ore Reserve	Ryan Kare
Mungari Mineral Resource	Andrew Engelbrecht
Mungari Ore Reserve	Matt Varvari
Mt Carlton Mineral Resource	Matthew Obiri-Yeboah
Mt Carlton Open Pit Ore Reserve	Sam Patterson
Mt Carlton Underground Ore Reserve	Ben Hawkins
Cracow Mineral Resource	Chris Wilson
Cracow Ore Reserve	Russell McBeath
Mt Rawdon Mineral Resource	Timothy Murphy
Mt Rawdon Ore Reserve	Dimitri Tahan
Marsden Mineral Resources	Michael Andrew
Marsden Ore Reserve	Anton Kruger

Full details of the Ernest Henry Mineral Resources and Ore Reserves are provided in the report entitled "Glencore Resources and Reserves as at 31 December 2018" released 1 February 2019 and available to view at [www.glencore.com](http://www.glencore.com). The information in this statement that relates to the Ernest Henry Mineral Resource and Ore Reserve is based on, and fairly represents, information and supporting documentation prepared by Colin Stelzer and Mike Corbett respectively. Colin and Mike are members of the Australasian Institute of Mining and Metallurgy and are full-time employees of Glencore. The Company confirms that all material assumptions and technical parameters underpinning the estimates in Glencore's market release continue to apply and have not materially changed. Colin Stelzer and Mike Corbett consent to the inclusion in this report of the matters based on their information in the form and context in which it appears.

## Forward looking statements

This report prepared by Evolution Mining Limited (or “the Company”) include forward looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as “may”, “will”, “expect”, “intend”, “plan”, “estimate”, “anticipate”, “continue”, and “guidance”, or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs. Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation. Forward looking statements are based on the Company and its management’s good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company’s business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company’s business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company’s control. Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

**Table 1: December 2018 Group Gold Mineral Resource Statement**

Gold			Measured			Indicated			Inferred			Total Resource			CP <sup>3</sup>	Dec 17 Resource Gold Metal (koz)
Project	Type	Cut-Off	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)		
Cowal <sup>1</sup>	Open pit	0.4	46.54	0.69	1,027	174.92	0.85	4,784	5.63	1.07	193	227.09	0.82	6,004		5,476
Cowal	UG	2.0	-	-	-	-	-	-	13.55	3.24	1,411	13.55	3.24	1,411		603
<b>Cowal<sup>1</sup></b>	<b>Total</b>		<b>46.54</b>	<b>0.69</b>	<b>1,027</b>	<b>174.92</b>	<b>0.85</b>	<b>4,784</b>	<b>19.18</b>	<b>2.60</b>	<b>1,604</b>	<b>240.64</b>	<b>0.96</b>	<b>7,415</b>	<b>1</b>	<b>6,079</b>
<b>Cracow<sup>1</sup></b>	<b>Total</b>	<b>2.8</b>	<b>0.27</b>	<b>9.04</b>	<b>79</b>	<b>1.09</b>	<b>6.47</b>	<b>227</b>	<b>1.59</b>	<b>2.88</b>	<b>147</b>	<b>2.96</b>	<b>4.78</b>	<b>454</b>	<b>2</b>	<b>511</b>
Mt Carlton <sup>1</sup>	Open pit	0.35	0.50	3.03	49	8.57	2.13	586	0.43	3.44	48	9.51	2.23	682		963
Mt Carlton	UG	2.4	-	-	-	0.45	8.38	120	0.08	7.43	20	0.53	8.20	141		93
<b>Mt Carlton<sup>1</sup></b>	<b>Total</b>		<b>0.50</b>	<b>3.00</b>	<b>49</b>	<b>9.02</b>	<b>2.44</b>	<b>706</b>	<b>0.52</b>	<b>4.10</b>	<b>68</b>	<b>10.04</b>	<b>2.60</b>	<b>823</b>	<b>4</b>	<b>1,056</b>
<b>Mt Rawdon<sup>1</sup></b>	<b>Total</b>	<b>0.2</b>	<b>5.19</b>	<b>0.41</b>	<b>68</b>	<b>37.36</b>	<b>0.65</b>	<b>783</b>	<b>7.51</b>	<b>0.60</b>	<b>146</b>	<b>50.07</b>	<b>0.62</b>	<b>996</b>	<b>5</b>	<b>1,067</b>
Mungari <sup>1</sup>	Open pit	0.5	0.19	1.02	6	35.03	1.27	1,433	9.27	1.56	463	44.49	1.33	1,902		1,927
Mungari	UG	2.0/1.5	0.32	8.40	86	2.39	3.61	278	2.32	3.31	247	5.04	3.78	611		633
<b>Mungari<sup>1</sup></b>	<b>Total</b>		<b>0.51</b>	<b>5.63</b>	<b>93</b>	<b>37.42</b>	<b>1.42</b>	<b>1,711</b>	<b>11.59</b>	<b>1.91</b>	<b>710</b>	<b>49.52</b>	<b>1.58</b>	<b>2,514</b>	<b>3</b>	<b>2,560</b>
<b>Ernest Henry<sup>2</sup></b>	<b>Total</b>	<b>0.9</b>	<b>11.57</b>	<b>0.71</b>	<b>264</b>	<b>47.76</b>	<b>0.62</b>	<b>952</b>	<b>12.71</b>	<b>0.62</b>	<b>253</b>	<b>72.05</b>	<b>0.63</b>	<b>1,470</b>	<b>6</b>	<b>1,920</b>
<b>Marsden</b>	<b>Total</b>	<b>0.2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>119.83</b>	<b>0.27</b>	<b>1,031</b>	<b>3.14</b>	<b>0.22</b>	<b>22</b>	<b>122.97</b>	<b>0.27</b>	<b>1,053</b>	<b>7</b>	<b>1,053</b>
<b>Total</b>			<b>64.59</b>	<b>0.76</b>	<b>1,579</b>	<b>427.41</b>	<b>0.74</b>	<b>10,194</b>	<b>56.24</b>	<b>1.63</b>	<b>2,951</b>	<b>548.25</b>	<b>0.84</b>	<b>14,725</b>		<b>14,245</b>

Data is reported to significant figures to reflect appropriate precision and may not sum precisely due to rounding  
 Mineral Resources are reported inclusive of Ore Reserves.

<sup>1</sup> Includes stockpiles

<sup>2</sup> Ernest Henry Operation cut-off 0.9% CuEq

<sup>3</sup> Group Mineral Resources Competent Person (CP) Notes refer to 1. James Biggam; 2. Chris Wilson; 3. Andrew Engelbrecht; 4. Matthew Obiri-Yeboah; 5. Tim Murphy; 6. Colin Stelzer (Glencore); 7. Michael Andrew

Full details of the Ernest Henry Mineral Resources and Ore Reserves are provided in the report entitled "Glencore Resources and Reserves as at 31 December 2018" released 1 February 2019 and available to view at [www.glencore.com](http://www.glencore.com). The Company confirms that it is not aware of any new information or data that materially affects the information included in the Report and that all material assumptions and parameters underpinning the estimates in the Report continue to apply and have not materially changed. Colin Stelzer consents to the inclusion in this report of the matters based on their information in the form and context in which it appears. Ernest Henry Resource is reported on an 81.5% basis for gold and 36.7% for copper (Evolution Mining has rights to 100% of the revenue from future gold production and 30% of future copper and silver produced from an agreed life of mine area and 49% of future gold, copper and silver produced from the Ernest Henry Resource outside the agreed life of mine area). Apportioning of the resource into the specific rights does not constitute a material change to the reported figures.

**Table 2: December 2018 Group Gold Ore Reserve Statement**

Gold			Proved			Probable			Total Reserve			CP <sup>3</sup>	Dec 17 Reserves Gold Metal (koz)
Project	Type	Cut-Off	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)		
<b>Cowal<sup>1</sup></b>	<b>Open pit</b>	<b>0.45</b>	<b>46.54</b>	<b>0.69</b>	<b>1,027</b>	<b>94.70</b>	<b>0.94</b>	<b>2,854</b>	<b>141.25</b>	<b>0.85</b>	<b>3,880</b>	<b>1</b>	<b>3,046</b>
<b>Cracow<sup>1</sup></b>	<b>Underground</b>	<b>3.4</b>	<b>0.34</b>	<b>5.76</b>	<b>63</b>	<b>0.81</b>	<b>4.77</b>	<b>124</b>	<b>1.15</b>	<b>5.07</b>	<b>187</b>	<b>2</b>	<b>245</b>
Mt Carlton <sup>1</sup>	Open pit	0.8	0.50	3.03	49	3.69	3.92	465	4.18	3.82	513	6	647
Mt Carlton	Underground	3.7	-	-	-	0.60	5.65	108	0.60	5.65	108	7	65
<b>Mt Carlton<sup>1</sup></b>	<b>Total</b>		<b>0.50</b>	<b>3.03</b>	<b>49</b>	<b>4.28</b>	<b>4.16</b>	<b>573</b>	<b>4.78</b>	<b>4.04</b>	<b>622</b>		<b>712</b>
<b>Mt Rawdon<sup>1</sup></b>	<b>Open pit</b>	<b>0.3</b>	<b>2.92</b>	<b>0.52</b>	<b>49</b>	<b>22.65</b>	<b>0.72</b>	<b>521</b>	<b>25.56</b>	<b>0.69</b>	<b>570</b>	<b>4</b>	<b>671</b>
Mungari <sup>1</sup>	Open pit	0.75	0.27	1.14	10	9.85	1.61	511	10.12	1.60	521		479
Mungari	Underground	3.2	0.20	5.26	34	0.54	4.58	80	0.74	4.77	113		177
<b>Mungari<sup>1</sup></b>	<b>Total</b>		<b>0.47</b>	<b>2.89</b>	<b>44</b>	<b>10.39</b>	<b>1.77</b>	<b>590</b>	<b>10.86</b>	<b>1.82</b>	<b>634</b>	<b>5</b>	<b>656</b>
<b>Ernest Henry<sup>2</sup></b>	<b>Underground</b>	<b>0.9</b>	<b>10.50</b>	<b>0.79</b>	<b>267</b>	<b>32.50</b>	<b>0.46</b>	<b>481</b>	<b>43.00</b>	<b>0.54</b>	<b>747</b>	<b>8</b>	<b>902</b>
<b>Marsden</b>	<b>Open pit</b>	<b>0.3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>65.17</b>	<b>0.39</b>	<b>817</b>	<b>65.17</b>	<b>0.39</b>	<b>817</b>	<b>3</b>	<b>817</b>
<b>Total</b>			<b>61.27</b>	<b>0.76</b>	<b>1,498</b>	<b>230.50</b>	<b>0.80</b>	<b>5,960</b>	<b>291.77</b>	<b>0.80</b>	<b>7,458</b>		<b>7,048</b>

Data is reported to significant figures to reflect appropriate precision and may not sum precisely due to rounding

<sup>1</sup> Includes stockpiles

<sup>2</sup> Ernest Henry Operation cut-off 0.9% CuEq

<sup>3</sup>Group Ore Reserve Competent Person (CP) Notes refer to 1. Ryan Kare; 2. Russell McBeath; 3. Anton Kruger; 4. Dimitri Tahan; 5. Matt Varvari; 6. Sam Patterson; 7. Ben Hawkins; 8. Mike Corbett (Glencore).

Full details of the Ernest Henry Mineral Resources and Ore Reserves are provided in the report entitled "Glencore Resources and Reserves as at 31 December 2018" released 1 February 2019 and available to view at [www.glencore.com](http://www.glencore.com). The Company confirms that it is not aware of any new information or data that materially affects the information included in the Report and that all material assumptions and parameters underpinning the estimates in the Report continue to apply and have not materially changed. Mike Corbett consents to the inclusion in this report of the matters based on their information in the form and context in which it appears. Ernest Henry Ore Reserve is reported on a 100% basis for gold and 30% for copper.

**Table 3: December 2018 Group Copper Mineral Resource Statement**

Copper			Measured			Indicated			Inferred			Total Resource			CP <sup>3</sup>	Dec 17 Resources Copper Metal (kt)
Project	Type	Cut-Off	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)		
Marsden	Total	0.2	-	-	-	119.83	0.46	553	3.14	0.24	7	122.97	0.46	560	1	560
Ernest Henry <sup>2</sup>	Total	0.9	5.21	1.32	69	21.51	1.17	252	5.73	1.17	67	32.44	1.19	387	2	334
Mt Carlton <sup>1</sup>	Open pit	0.35	0.50	0.24	1	8.57	0.30	26	0.43	0.46	2	9.51	0.30	29		50
Mt Carlton	Underground	2.4	-	-	-	0.45	1.04	5	0.08	1.15	1	0.53	1.06	6		3
Mt Carlton <sup>1</sup>	Total		0.50	0.24	1	9.02	0.34	30	0.52	0.57	3	10.04	0.34	34	3	52
<b>Total</b>			<b>5.71</b>	<b>1.23</b>	<b>70</b>	<b>150.36</b>	<b>0.56</b>	<b>835</b>	<b>9.38</b>	<b>0.82</b>	<b>77</b>	<b>165.45</b>	<b>0.59</b>	<b>982</b>		<b>946</b>

Group Mineral Resources Competent Person<sup>3</sup> (CP) Notes refer to: 1. Michael Andrew; 2. Colin Stelzer (Glencore); 3 Matthew Obiri-Yeboah

**Table 4: December 2018 Group Copper Ore Reserve Statement**

Copper			Proved			Probable			Total Reserve			CP <sup>3</sup>	Dec 17 Resources Copper Metal (kt)
Project	Type	Cut-Off	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)	Tonnes (Mt)	Copper Grade (%)	Copper Metal (kt)		
Marsden		0.3	-	-	-	65.17	0.57	371	65.17	0.57	371	1	371
Ernest Henry <sup>2</sup>	Total	0.9	3.15	1.49	47	9.75	0.91	89	12.90	1.05	136	2	165
Mt Carlton <sup>1</sup>	Open pit	0.8	0.50	0.24	1	3.69	0.71	26	4.19	0.66	27	3	27
Mt Carlton	Underground	3.7	-	-	-	0.60	0.70	4	0.60	0.70	4	4	1
Mt Carlton <sup>1</sup>	Total		0.50	0.24	1	4.28	0.71	30	4.78	0.66	31		28
<b>Total</b>			<b>3.65</b>	<b>1.32</b>	<b>48</b>	<b>79.20</b>	<b>0.62</b>	<b>490</b>	<b>82.85</b>	<b>0.65</b>	<b>538</b>		<b>564</b>

Group Ore Reserve Competent Person<sup>3</sup> (CP) Notes refer to: 1. Anton Kruger; 2. Mike Corbett (Glencore). 3. Sam Patterson; 4. Ben Hawkins

The following notes relate to Tables 3 and 4.

Data is reported to significant figures to reflect appropriate precision and may not sum precisely due to rounding

Mineral Resources are reported inclusive of Ore Reserves.

Evolution cut-off grades are reported in g/t gold

<sup>1</sup> Includes stockpiles

<sup>2</sup> Ernest Henry Operation cut-off 0.9% CuEq

Full details of the Ernest Henry Mineral Resources and Ore Reserves are provided in the report entitled "Glencore Resources and Reserves as at 31 December 2018" released 1 February 2019 and available to view at [www.glencore.com](http://www.glencore.com). The Company confirms that it is not aware of any new information or data that materially affects the information included in the Report and that all material assumptions and parameters underpinning the estimates in the Report continue to apply and have not materially changed. Colin Stelzer and Mike Corbett consent to the inclusion in this report of the matters based on their information in the form and context in which it appears. Ernest Henry Resource is reported on an 81.5% basis for gold and 36.7% for copper (Evolution Mining has rights to 100% of the revenue from future gold production and 30% of future copper and silver produced from an agreed life of mine area and 49% of future gold, copper and silver produced from the Ernest Henry Resource outside the agreed life of mine area). Apportioning of the resource into the specific rights does not constitute a material change to the reported figures. Ernest Henry Reserve is reported on a 100% basis for gold and 30% for copper.

## MATERIAL INFORMATION SUMMARY

Material Information Summaries are provided for the Cowal Mineral Resource and Ore Reserve pursuant to ASX Listing Rules 5.8 and 5.9 and the Assessment and Reporting Criteria in accordance with JORC Code 2012 requirements. The Assessment and Reporting Criteria in accordance with JORC Code 2012 is presented in Appendix 1.

### 1.0 COWAL

#### Cowal Mineral Resource

The December 2018 Cowal Mineral Resource estimate of 240.64Mt at 0.96g/t gold for 7,415koz gold represents an increase of 1,336koz gold compared to the December 2017 estimate of 199.80Mt at 0.95g/t gold for 6,079koz gold net of mining depletion.

Changes to the Mineral Resource estimate for Cowal are largely due to:

- Addition of 944,000 ounces due to resource growth largely due to new drilling and improved understanding of the controls on mineralisation at GRE46 Underground (+808,000 ounces) and at E41 (+136,000 ounces)
- Addition of 705,000 ounces through design changes at E41, E42 and E46 open pits to reflect lower mining costs due to the inclusion of automation
- Mining depletion during the period (-301koz)

The December 2018 GRE46 underground resource is reported at a 2.0g/t cut-off grade recording a slight increase in the average grade to 3.24 g/t Au (from 3.0g/t cut-off grade and 3.17 g/t Au average grade in the December 2017 MROR update). The impact of discovery of the Dalwhinnie mineralisation, along with an improved understanding of mineralisation controls, has significantly increased the average grade of the resource from 3.17g/t Au to 4.52g/t Au above a 3.0g/t Au cut-off grade.

Cut-off (g/t)	Tonnes (Mt)	Grade Au (g/t)	Metal Au (koz)
1.5	22.74	2.64	1,927
<b>2.0</b>	<b>13.55</b>	<b>3.24</b>	<b>1,411</b>
2.5	8.33	3.85	1,031
3.0	5.17	4.52	751

#### Cowal Underground Inferred Mineral Resource reported at various cut-off grades

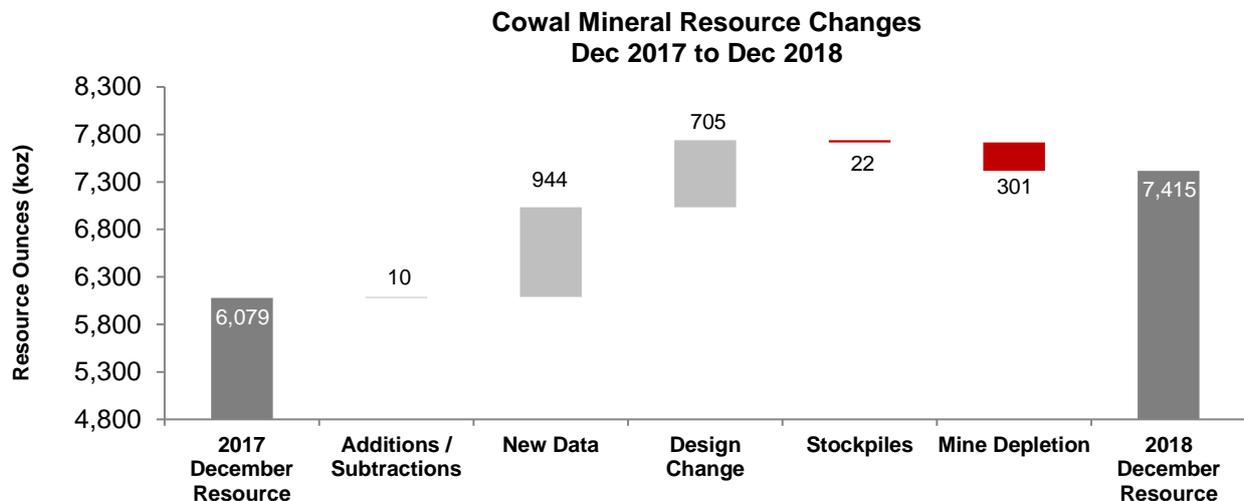
#### Cowal Mineral Resource December 2018

Gold			Measured			Indicated			Inferred			Total Resource		
Project	Type	Cut-Off	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)
Cowal <sup>1</sup>	OP	0.4	46.54	0.69	1,027	174.92	0.85	4,784	5.63	1.07	193	227.09	0.82	6,004
Cowal	UG	2.0							13.55	3.24	1,411	13.55	3.24	1,411
<b>Total</b>			<b>46.54</b>	<b>0.69</b>	<b>1,027</b>	<b>174.92</b>	<b>0.85</b>	<b>4,784</b>	<b>19.18</b>	<b>2.60</b>	<b>1,604</b>	<b>240.64</b>	<b>0.96</b>	<b>7,415</b>

Data is reported to significant figures to reflect appropriate precision and may not sum precisely due to rounding

Mineral Resources are reported inclusive of Ore Reserves. <sup>1</sup> Includes stockpiles

OP denotes open pit and UG denotes underground



### Cowal Ore Reserve

The December 2018 Cowal Ore Reserve estimate of 141.25Mt at 0.85g/t gold for 3,880koz gold represents an increase of 834koz gold compared to the December 2017 estimate of 116.281Mt at 0.81g/t gold for 3,046koz gold.

Changes to the Ore Reserve estimate for Cowal are largely due to:

- Addition of 1,025koz through the inclusion of E41, E46 & GRE Open Pits and the E42 In-Wall Ramp
- New Data increase of 123koz

The E42 In-Wall Ramp Ore Reserve addition of 599koz is based on a Pre-feasibility Study completed during 2018.

Ore Reserve addition from E41, E46 and GRE open pits have been based on optimised pit designs using current mining and processing methods on site that have been successfully implemented for the past 13 years of operation.

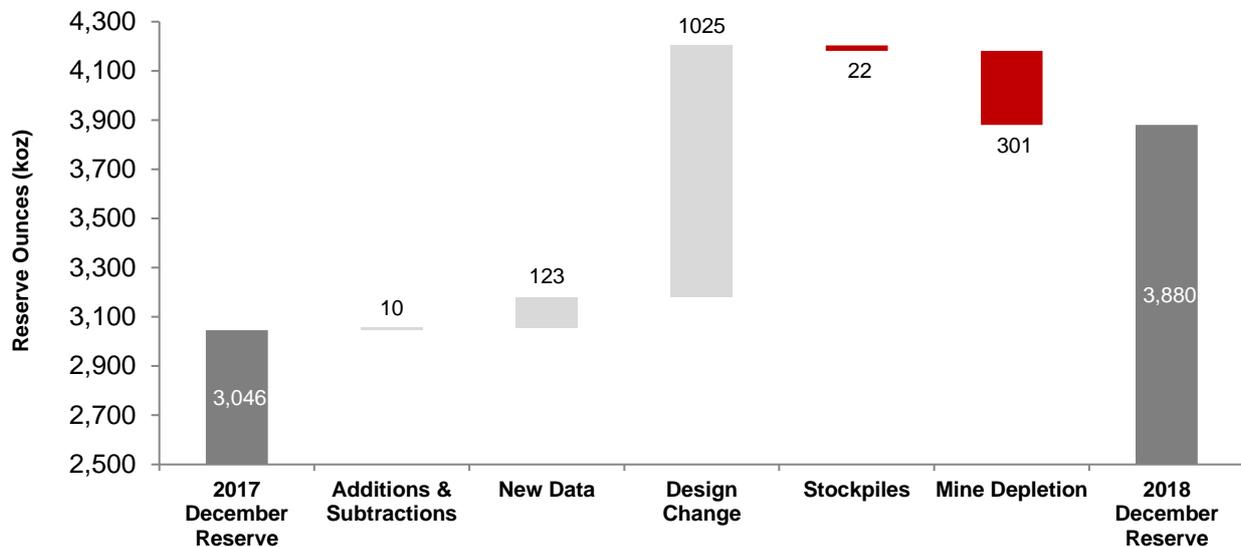
### Cowal Ore Reserve December 2018

Gold			Proved			Probable			Total Reserve		
Project	Type	Cut-Off	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)	Tonnes (Mt)	Gold Grade (g/t)	Gold Metal (koz)
Cowal <sup>1</sup>	Open pit	0.45	46.54	0.69	1,027	94.70	0.94	2,854	141.25	0.85	3,880
<b>Total</b>			<b>46.54</b>	<b>0.69</b>	<b>1,027</b>	<b>94.70</b>	<b>0.94</b>	<b>2,854</b>	<b>141.25</b>	<b>0.85</b>	<b>3,880</b>

Data is reported to significant figures to reflect appropriate precision and may not sum precisely due to rounding

<sup>1</sup> Includes stockpiles

### Cowal Ore Reserve Changes Dec 2017 to Dec 2018



## 1.1 GRE46 Underground and E41W Open Pit Mineral Resource (Cowal)

### 1.1.1 Material Assumptions for Mineral Resources

The Cowal Open Pit Mineral Resource estimate is defined within an optimised pit shell using an A\$1,800/oz gold price assumption and based on the same detailed geotechnical design parameters, practical mining considerations and mining depletion at 31 December 2018 as the Cowal Ore Reserve. The Mineral Resource estimate also draws on the experience gained since mining commenced in April 2005 at Cowal.

The GRE46 Underground Mineral Resource estimate is defined by an underground mining shape optimiser using an A\$1,800/oz gold price assumption. The GRE46 Underground has assumed conventional mining techniques and parameters typical of current Evolution underground operations. It is assumed that metallurgical recovery will be similar to the E42 ore body.

### 1.1.2 Geology and Geological Interpretation

The mineralisation at the Cowal Mine comprises four deposits: GRE46, E41, E42 and E46

The GRE46 deposit is subdivided into the open pit and underground resources. The GRE46 zone trends north-south, dips vertical to -70° west, and extends approximately 1,500m along strike, 175m across strike and at least 800m down dip. Individual lenses in the GRE46 mineralised zone are 1.0m to 27m wide, 25m to 250m long, and extend 50m to 200m down dip. Lenses consist of narrow high-grade quartz carbonate, pyrite and base metal veins controlled within a structural north-south corridor, broad zones of alteration around lithology contacts and occasional zones of grade enrichment occur in dilatant structures within the deposit known as Quartz Sulphide Breccias. Host lithology varies from poorly mineralised massive intrusive diorite and fine volcanoclastic sediments through to the preferential mineralised trachyandesite lava in the north, lenses of coarse to conglomeritic volcanoclastic sediments and the andesitic Dalwhinnie sill unit to the east. Lithological contacts with strong competency contrasts also provide broad areas of mineralisation.

The E41 West mineralisation strikes north-northeast and dips -70° east, and measures 750m along strike and 250 m across strike. Individual mineralised zones are 35 m to 50m wide and extend down dip for 125m. The E41 East mineralisation strikes east-west and dips -35° to -80° south, and measures 475m along strike and 500m across strike. Individual mineralised zones are 35m to 50m wide and extend down dip for 225m.

The E42 deposit dips -35° to -45° to the south west with an approximate extent of 850m by 850m and extends 500m down dip. Mineralisation is contained within small discontinuous veins contained within larger mineralised envelopes approximately 50m wide.

The E46 deposit mineralisation trends north-northeast, dips  $-40^{\circ}$  west to flat-lying, and measures approximately 650m along strike and 17m across strike. Individual zones are approximately 50m wide and extend 200m down dip.

Confidence in the geological interpretation is high. The interpretation is based on drilling that ranges from a 25m by 25m spacing to 50m by 50m spacing. The interpretation also incorporates data gathered from the mapping of exposures created by open cut mining which has been in operation continuously since 2005. The mapping has assisted in understanding the controls on mineralisation to improve the confidence in the geological interpretation. All available data from drilling and mapping is used in the geological interpretation. Petrological, litho-geochemical and structural studies have also been undertaken and have been used to develop the geological interpretation.

The use of pit mapping and other production data such as grade control drill data has helped resolve local controls on mineralisation at E42 as such the current interpretations have applied this knowledge to surrounding deposits and is relatively robust. An iterative process has been adopted with respect to the geological interpretation to ensure that it reflects the current understanding of the geology and controls on mineralisation.

The factors that affect the continuity of grade and geology at the Cowal deposits are structure, lithology competency contrasts and alteration, in order of magnitude. Areas of higher grade are those where there is a greater frequency of structures intersecting a preferential host lithology sequence, such as the north of the GRE46 deposit where trachyandesite lavas and coarse volcanoclastic sediments which abut a competent diorite are cut by mineralising structures parallel to lithology boundaries. These factors have been addressed in the interpretation and domaining of the resource and the estimation process.

#### *1.1.3 Sampling and Sub-sampling*

Diamond core is cut with a diamond saw in the primary zone, or a chisel for core too soft and friable. Core is cut to preserve the bottom of hole orientation mark and the top half of core is always sent for analysis to ensure no bias is introduced. During the 2016 Stage H drilling program a majority of the NQ daughter holes were whole core sampled to expedite sample processing and assay turnaround.

Prior to February 2018, RC/AC Samples have been split using either a riffle splitter from a bulk sample collected at the rig or a rotary cone splitter attached to the cyclone. From February 2018 onwards, full samples have been sent to the Laboratory. For most holes, chip samples were collected dry, but several areas have been affected by groundwater.

#### *1.1.4 Sample Analysis Methods*

Early in the North Ltd program, samples were crushed to 95% minus 6mm and a sub-sample then pulverised to 95% minus  $75\mu\text{m}$ . Mid-way in the North Ltd program, specifications were modified to crushing to 95% minus 10mm to 15mm followed by pulverising to 85% minus  $75\mu\text{m}$ . Analysis of all the North Ltd samples was done at Australian Laboratory Services and Australian Assay Labs, Orange, NSW. Both independent facilities used fire assay of a 50g sample with an atomic absorption (AA) finish.

More recent sample preparation was conducted by SGS West Wyalong and consisted of:

Drying in the oven at  $105^{\circ}\text{C}$ ; crushing in a jaw crusher; fine crushing in a Boyd crusher to 2 – 3mm; rotary splitting a 3kg assay sub-sample if the sample is too large for the LM5 mill; pulverising in the LM5 mill to nominal; 90% passing  $75\mu\text{m}$ ; and a 50g fire assay charge was taken with an atomic absorption (AA) finish. The detection limit was 0.01g/t Au.

#### *1.1.5 Drilling Techniques*

Most of the drilling used to generate the Mineral Resources at Cowal is diamond core for the primary portion of the deposit. RC and AC drilling was predominantly utilised to delineate the oxide areas.

Drill holes were drilled on a nominal even spaced grid pattern to avoid clustering and collar and down hole surveys were utilised to accurately record final locations. Industry standard sampling, assaying and Quality Assurance/Quality Control (QA/QC) practices of the day were applied to all forms of drilling.

A majority of the resource definition holes are drilled with an HQ3 collar through the oxide and completed through the primary zone to target using NQ2 core. Due to the depth of holes into the north of the GRE46 deposit (650m Average) controlled diamond drilling with occasional directional diamond holes were utilised, this drilling consisted of a fence of NQ sized holes with a nominal 50 x 50m Spacing for deeper portions and 25 x 25 for the upper Open Pit resources.

Reverse Circulation and Air Core drilling was also used to delineate oxide areas of the resource utilising 4.5 - 5.5-inch face sampling hammer. RC drilling was completed to base of oxide with some holes hosting diamond tails. Air Core drilling was conducted to refusal.

Core has been oriented using a variety of techniques in line with standard industry practice of the day.

#### *1.1.6 Estimation Methodology*

GRE46 open pit model remained unchanged with a separate GRE46UG Model developed for underground resource optimisation.

A review of the 2017 GRE46 model was undertaken to re-define domains with similar features and continuity of mineralisation. The review looked at primary material only. The resource estimation process has underlying assumptions that each domain shares similar characteristics.

Top cutting of assay data is considered appropriate where outliers exist outside the lognormal distribution. These values have the potential to unduly bias grade estimates.

A review was completed to establish the optimum search parameters for the kriging process. Search distances and kriging weights were examined for the effect on kriging variance, slope of regression and negative kriging weights.

Individual domains were reviewed in terms of grade distribution using frequency histograms.

1m composites were formed for use in grade estimation for the GRE46UG model. The decision to use 1m composites for underground was based on the narrow nature of the veins. Surpac software was used to composite data.

Estimation involved the use of Categorical Indicator Kriging (CIK) and Ordinary Kriging (OK) techniques to estimate grade into the domained model. CIK helps to define mineralised material above or below a defined threshold. Once defined OK techniques are used to estimate grade into the resource. A discretisation of 5 x 5 x 5 in the plane x, y, z was used with a minimum sample number of 12 and maximum of 32 for the estimate. Search ellipsoids are based on the modelled semi-variogram ranges for each domain.

Parent block size for the GRE46UG model was selected at 10m x 10m x 10m. Ordinary kriging was completed on all domains and block grades were compared with composite of cut data to ensure kriging grades were represented in block grades. Swath plots were used to compare the modelled gold distributions in relation to composites as well as visual validation on 25m sections.

An update of the E41W Open pit model was also conducted, to incorporate new drilling conducted in 2018. Like GRE46, the estimation approach was based on CIK and OK methodologies.

Top cutting of assay data is considered appropriate where outliers exist outside the lognormal distribution. These values have the potential to unduly bias grade estimates.

Individual lithology domains were reviewed in terms of grade distribution using frequency histograms. Domains were combined where differences in sample populations were deemed negligible or sample numbers inadequate.

1m composites were formed for use in grade estimation for the E41W open pit. The decision to use 1m composites for open pit was based on comparisons between 1m and 3m composites which yielded little differences in means and distributions. Surpac software was used to composite data.

A review was completed to establish the optimum search parameters for the kriging process. Search distances and kriging weights were examined for the effect on kriging variance, slope of regression and negative kriging weights.

The estimation process used relatively large search distances and sample numbers due to the high nugget values. This resulted in a relatively smoothed grade estimate due to less predictable grade distributions. A discretisation of 5 x 5 x 3 in the plane x, y, z was used with a minimum sample number of 12 and maximum of 32 for the estimate. The smoothing effect is constrained through the creation of appropriate waste domains based on grade indicator model. Search ellipsoids are based on the modelled semi-variogram ranges for each domain.

Parent block size for the open pit model was selected at 15m x 15m x 9m. Ordinary kriging was completed on all domains and block grades were compared with composite of cut data to ensure kriging grades were represented in block grades. Swath plots were used to compare the modelled gold distributions in relation to composites as well as visual validation on 25m sections.

No assumption of mining selectivity has been incorporated in the estimate.

#### *1.1.7 Resource Classification*

The Mineral Resource classification is based on good confidence of the geological and grade continuity, 25m by 25m spaced drill hole density in the bulk of the resource and up to 50m by 50m spaced data in the peripheral parts of the resource. Ten years of continuous open pit mining operations and the iterative use of 10 m by 10 m spaced grade control and production data have been used to refine the Mineral Resource estimate. Reconciliation of the Mineral Resource against production data supports the classification that has been applied to the Mineral Resource.

The Mineral Resource estimate appropriately reflects the view of the Competent Person and is assigned in accordance with the JORC 2012 guideline.

#### *1.1.8 Cut-off Grade*

Mineral Resources for open pit are reported using a cut-off grade of 0.4g/t Au. This reflects the cost and price assumptions derived from operational performance. GRE46UG Mineral resources used a 2g/t Au cut-off grade which reflects the increased costs and price assumptions from an underground operational performance.

#### *1.1.9 Mining and Metallurgical Methods and parameters and other modifying factors considered to date*

Mining factors are based on the current operation at Cowal, which has been operating continuously since 2005. The mining factors applied reflect the current open cut operation.

The Mineral Resource spatial constraining shells for the open pits are based on the cost structure of the owner mining rates at E42 Open Pit with the inclusion of automation to decrease unit mining costs by 20%. The GRE46 Underground has assumed conventional mining techniques and parameters typical of current Evolution underground operations.

Metallurgical assumptions are based on the performance of the Cowal processing plant which has been in continuous operation since 2006. All ore to date has been sourced from the E42 open pit. Oxide ore is stockpiled for later treatment. Sulphide ore is processed by crushing, two stage grinding, sulphide flotation, regrind, and CIL recovery. The plant currently processes 8.0Mtpa.

Although the new resources are located within the existing mining lease, any proposed mining extraction and processing will be subject to permitting and the completion of an Environmental Impact Study.

## **1.2 Cowal Open Pit Ore Reserves**

### *1.2.1 Material Assumptions for Ore Reserves*

The Ore Reserve estimate is based on the current Mineral Resource estimate as described in Section 1.1. The Mineral Resources reported are inclusive of those Mineral Resources modified to produce the Ore Reserve estimate.

The methodology used to convert the Mineral Resource to Ore Reserve can be described as optimisation of existing open pit operations through standard Open Pit mine planning process steps of pit optimisation, mine design, mine schedule and financial modelling. Factors and assumptions have been formed from existing operating technical assumptions and cost models. On this basis the analysis is considered at a higher than feasibility study.

### *1.2.2 Ore Reserve Classification*

The Ore Reserves are predominantly derived from Indicated Resources. This classification is based on the density of drilling, the experience of ten years mining of E42 and the mining method employed. The only Proved Reserves derived from Measured Resources are those reported in known and quantified stockpiles. It is the Competent Person's view that the classifications used for the Ore Reserves are appropriate.

### *1.2.3 Mining Method*

Current open pit mining at Cowal is a conventional truck and excavator operation, with standard waste rock dumps, ore stockpiling and reclaim of lower grade ore. This excavator fleet is utilised to selectively mine ore material and waste from a total 9m design bench height in three 'flitches' each of 3m height. Ore dilution and recovery loss is accounted for in this process and no additional mining dilution or recovery factors are applied to the Cowal Open Pit Ore Reserve estimate.

The current operations demonstrate the appropriateness of this mining method as the basis of the Ore Reserve estimate for the E41, E46, GRE and E42 open pits. The In-Wall Ramp Ore reserve reported as part of the E42, differs from the above methodology as it also includes an In-wall ramp (developed with underground mining systems) to provide access for open pit mining, a pre-feasibility study has been completed in 2018 for support.

#### *1.2.4 Processing Method*

The ore is to be processed through an existing traditional CIP/ CIL process plant with the inclusion of the newly built Float Tails Leach circuit. The current and estimated future average throughput and recovery for gold is 8.0 to 9.8Mtpa and an average LOM recovery of 84% respectively. An operating history of over ten years and metallurgical test work done by Barrick Australia Pacific in 2011 supports the metallurgical parameters used in the Ore Reserve estimation.

#### *1.2.5 Cut-off Grade*

Ore Reserves for open pit are reported using a cut-off grade of 0.45g/t Au. This reflects the new cut-off grade calculation methodology which uses all operating ore costs at the end of the life of mine when ex-pit mining operations have ceased. This is a 0.05g/t increase from December 2017 reserve cut-off grade of 0.40g/t Au.

#### *1.2.6 Estimation Methodology*

See section 1.1.6 above.

#### *1.2.7 Material Modifying Factors*

With over ten years of continuous mining (April 2005) and processing operations (April 2006), Cowal is a mature operation with reliable historical data. Inputs for the Ore Reserve estimate are generally consistent with current and planned operating practices and experience. For this reason, the analysis is considered to be at a higher level than a feasibility study.

Mining and ore processing operations at the Cowal open pit are conducted pursuant to a granted mining lease, exploration licences and associated environmental and regulatory approvals/permits. The granted tenements and permits cover all infrastructure in the immediate vicinity of the mine site, including the open pit, mill, waste rock dumps and tailings storage facilities.

While E41, E46 and GRE46 pits are subject future approvals the planning allows for sufficient time and expense to achieve these and previous input from the sustainability dept is that there is no reason to predict anything other than a positive outcome.

To demonstrate the Ore Reserve as economic it has been evaluated through a financial model. This process has demonstrated that the Ore Reserves for the Cowal open pit has a positive cash flow.

## APPENDIX 1: JORC CODE 2012 ASSESMENT AND REPORTING CRITERIA

The following information is provided in accordance with Table 1 of Appendix 5A of the JORC Code 2012 - Section 1 (Sampling Techniques and Data), Section 2 (Reporting of Exploration Results), Section 3 (Estimation and Reporting of Mineral Resources) and Section 4 (Estimation and Reporting of Ore Reserves).

### Cowal Mineral Resource and Ore Reserve

#### JORC Code 2012 Edition – Table 1

#### Section 1 Sampling Techniques and Data

Criteria	Commentary
<i>Sampling techniques</i>	<p>Most of the drilling used to generate the Mineral Resource at Cowal is diamond core for the primary portion of the deposit. Reverse Circulation and Air Core drilling was predominantly utilised to delineate the oxide areas.</p> <p>Drill holes were drilled on a nominal even spaced grid pattern to avoid clustering. Collar and down hole surveys were utilised to accurately record final locations. Industry standard sampling, assaying and QA/QC practices were applied to all forms of drilling.</p> <p>Prior to 2018, Drill core was halved with a diamond saw in 1m intervals, irrespective of geological contacts. Since 2018, sampling to lithological contacts has been implemented. Oxide material that was too soft and friable to be cut with a diamond saw was split with a chisel. Core was cut to preserve the bottom of hole orientation mark and the top half of core sent for analysis to ensure no bias is introduced. Early RC/AC samples were collected as a bulk sample in 1m intervals from the drill rig and riffle-split to generate a sub-sample for the analytical lab. More recently RC/AC samples are taken using a rotary cone splitter at 1m intervals.</p> <p>Early in the North program, samples were crushed to 95% minus 6mm and a sub-sample then pulverised to 95% minus 75µm. Mid-way in the North program, specifications were modified to crushing to 95% minus 10mm to 15mm followed by pulverising to 85% minus 75µm. Analysis of all the North samples was done at Australian Laboratory Services and Australian Assay Labs, Orange, NSW. Both independent facilities used fire assay of a 50g sample with an atomic absorption (AA) finish. More recent sample preparation was conducted by SGS West Wyalong and consisted of:</p> <p>Drying in the oven at 105°C; crushing in a jaw crusher; fine crushing in a Boyd crusher to 2-3mm; rotary splitting a 3kg assay sub-sample if the sample is too large for the LM5 mill; pulverising in the LM5 mill to nominal; 90% passing 75µm; and a 50g fire assay charge was taken with an atomic absorption (AA) finish. The detection limit was 0.01 g/t Au.</p>
<i>Drilling techniques</i>	<p>A majority of the resource definition holes are drilled with an HQ3 collar through the oxide and completed through the primary zone to target using NQ2. Due to the depth of holes into the north of the GRE46 deposit (650m Average) controlled diamond drilling with occasional directional diamond holes were utilised, this drilling consisted of a fence of NQ sized holes with a nominal 50x50m spacing for deeper portions and 25x25 for the upper Open Pit resources.</p> <p>Reverse Circulation and Air Core drilling was also used to delineate oxide areas of the resource utilising 4.5 - 5.5-inch face sampling hammers. RC drilling was completed to base of oxide with some holes hosting diamond tails. Air Core drilling was conducted to refusal. Additional RC drilling was completed from within the existing Stage G pit during 2016.</p> <p>Core has been oriented using a variety of techniques in line with standard industry practice.</p> <p>Provisions are made in the drilling contract to ensure that hole deviation is minimised and core/chip sample recovery is maximised. This is monitored by a geologist on a hole by hole basis. Core recovery is recorded in the database. There are no significant core loss or sample recovery issues. Core is reoriented and marked up at 1m intervals. Measurements of recovered core are made and reconciled to the driller's depth blocks, and if necessary, to the driller's rod counts.</p> <p>There is no apparent relationship between core-loss and grade.</p>
<i>Drill sample recovery</i>	<p>Provisions are made in the drilling contract to ensure that hole deviation is minimised and core/chip sample recovery is maximised. This is monitored by a geologist on a hole by hole basis. Core recovery is recorded in the database. There are no significant core loss or sample recovery issues. Core is reoriented and marked up at 1m intervals. Measurements of recovered core are made and reconciled to the driller's depth blocks, and if necessary, to the driller's rod counts.</p> <p>There is no apparent relationship between core-loss and grade.</p>

Criteria	Commentary
<i>Logging</i>	<p>All core intervals and RC/AC chips are logged.</p> <p>Historically RC chips were logged in the field onto a printed template and uploaded to the database in the office. Current practice is for RC chips to be inspected at the rig while drilling, with detailed logging taking place in the office via LogChief software which is validated and uploaded directly into the Datashed database. Chips are logged for rock-type, alteration, mineralisation and veining as well as point data for base of transported and base of oxide/top of primary rock.</p> <p>Geologists log core for lithology, alteration, structure, and veining. Logging was done directly onto laptop computers using a software package called LogChief.</p> <p>The Cowal logging system allows recording of both a primary and a secondary lithology and alteration. Geologists also record the colour, texture, grain size, sorting, rounding, fabric, and fabric intensity characterising each lithological interval.</p> <p>The logged structures include faults, shears, breccias, major veins, lithological contacts, and intrusive contacts. Structures are also recorded as point data to accommodate orientation measurements.</p> <p>Structural measurements are obtained using alpha and beta measurements then converted using the downhole survey measurements to obtain the dip and dip direction. Freiberg compasses and Kenometer Core Orientation tools are used for structural measurements.</p> <p>Geologists log vein data including vein frequency, vein percentage of interval, vein type, composition, sulphide percentage per metre, visible gold, sulphide type, and comments relative to each metre logged.</p> <p>Geotechnical logging is done by field technicians and geologists. Logging is on a per metre basis and includes percentage core recovery, percentage RQD, fracture count, and an estimate of hardness. The geotechnical data is entered into the database.</p> <p>All drill core, once logged, is digitally photographed on a core tray-by-tray basis. The digital image captures all metre marks, the orientation line (BOH) and geologist's lithology, alteration, mineralogy, and other pertinent demarcations. The geologists highlight geologically significant features such that they can be clearly referenced in the digital images.</p>
<i>Sub-sampling techniques and sample preparation</i>	<p>Diamond Core is cut with a diamond saw in competent rock or chisel where rock is soft and friable. Core is cut to preserve the bottom of hole orientation mark and the top half of core is always sent for analysis to ensure no bias is introduced. During the Stage H drilling program, a majority of the NQ daughter holes were whole core sampled to expedite sample processing and assay turnaround.</p> <p>Prior to February 2018, RC/AC Samples have been split using either a riffle splitter from a bulk sample collected at the rig or a rotary cone splitter attached to the cyclone. From February 2018 onwards, full samples have been sent to the Laboratory. For most holes, chip samples were collected dry, but several areas have been affected by groundwater.</p> <p>In 2003 Analytical Solutions Ltd conducted a Review of Sample Preparation, Assay and Quality Control Procedures for Cowal Gold Project. This study, combined with respective operating company policy and standards (North Ltd, Homestake, Barrick and Evolution) formed the framework for the sampling, assaying and QAQC protocols used at Cowal to ensure appropriate and representative sampling.</p> <p>Field duplicates are taken at regular intervals on RC/AC holes.</p> <p>Results per interval are reviewed for half core samples and if unexpected or anomalous assays are returned an additional quarter core may be submitted for assay.</p>
<i>Quality of assay data and laboratory tests</i>	<p>SGS West Wyalong acts as the Primary Laboratory and ALS Orange conducts independent Umpire checks. Both labs operate to international standards and procedures and take part in the Geostatistical Round Robin inter-laboratory test survey. The Cowal QA/QC program comprises blanks, Certified Reference Material (CRM), inter-laboratory duplicate checks, and grind checks. Typical protocols for QAQC checks are summarised below, however depending on sample submission batch sizes overall rates may vary slightly:</p> <p>1 in 30 fine crush residue samples has an assay duplicate. 1 in 20 pulp residue samples has an assay duplicate.</p> <p>Wet screen grind checks are performed on 1 in 20 pulp residue samples. A blank is submitted 1 in every 38 samples, CRM's are submitted 1 in every 20 samples. The frequency of repeat assays is set at 1 in 30 samples.</p> <p>All sample numbers, including standards and duplicates, are pre-assigned by a QA/QC Administrator and given to the sampler on a sample sheet. The QA/QC Administrator monitors the assay results for non-compliance and requests action when necessary. Batches with CRM's that are outside the <math>\pm 2SD</math> acceptance criteria are reviewed and re-assayed if definitive bias is determined or if re-assay will make a material difference. Material used for blanks is uncertified,</p>

Criteria	Commentary
<i>Verification of sampling and assaying</i>	<p>sourced locally, comprising fine river gravel which has been determined to be below detection limit. A single blank is submitted every 38 samples. Results are reviewed by the QA/QC Administrator upon receipt for non-compliances. Any assay value greater than 0.1g/t Au will result in a notice to the laboratory. Blank assays above 0.20g/t Au result in re-assay of the entire batch. The duplicate assays (Au2) are taken by the laboratory during the subsampling at the crushing and pulverisation stages. The results were analysed using scatter plots and relative percentage difference (RPD) plots. Repeat assays represent approx. 10% of total samples assayed. Typically, there is a large variance at the lower grades which is common for low grade gold deposits, however, the variance decreases to less than 10% for grades above 0.40g/t Au, which is the cut-off grade used at Cowal. Approximately 5% of the pulps, representing a range of expected grades, are submitted to an umpire assay laboratory (ALS Orange) to check for repeatability and precision. Analysis of the data shows that the Principal Laboratory is performing to an acceptable level.</p> <p>No dedicated twinning drilling has been conducted however verification of significant intercepts has been conducted by Grade Control drilling and mining production and reconciliation has occurred at the E42 deposit since 2005.</p> <p>Cowal uses DataShed software system to maintain the database. Digital assay results are loaded directly into the database. The software performs verification checks including checking for missing sample numbers, matching sample numbers, changes in sampling codes, inconsistent “from-to” entries, and missing fields. Results are not entered into the database until the QA/QC Administrator approves of the results. A QA/QC report is completed for each drill hole and filed with the log, assay sheet, and other appropriate data.</p>
<i>Location of data points</i>	<p>All recent drill hole collars are surveyed using high definition DGPS. All drill holes were surveyed using a downhole survey camera. For all hole types, the first survey reading was approximately 18 m from surface, then at 30 m intervals and, finally, at the end of each hole.</p> <p>On completion of each angled drill hole, a down hole gyroscopic (Gyro) survey is conducted. The Gyro tool was referenced to the accurate surface surveyed position of each hole collar and readings were taken at intervals to the base of each hole (“in run”) and at intervals back to surface (“out run”). The results of these two surveys were then compared and a final survey produced if there was “closure” between surveys. The Gyro results were entered into the drill hole database without conversion or smoothing.</p> <p>An aerial survey was flown during 2003 by AAM Hatch. This digital data has been combined with surveyed drill hole collar positions and other features (tracks, lake shoreline) to create a digital terrain model (DTM). The survey was last updated in late 2014.</p> <p>In 2004, Cowal implemented a new mine grid system with the assistance of AAM Hatch. The current mine grid system covers all areas within the ML and ELs at Cowal with six digits.</p>
<i>Data spacing and distribution</i>	<p>Drilling at Cowal covers all mining and exploration licences, an approximate area of 20km (north-south) by 20km (east-west), with most of the drilling focused on E41, E42, E46, and GRE46. Drilling at the E41, E46, and GRE46 deposits has an average spacing of 50 m by 50 m both along and across strike, while E42 has a nominal drill hole spacing of 25 m by 25 m, extending to 50 m by 50 m on the periphery of the deposit.</p> <p>This drill spacing is generally sufficient to generate reliable Mineral Resource and Ore Reserve estimates utilising definitions and classifications consistent with the 2012 JORC Code. All drilling is sampled at 1 m intervals irrespective of drill type; samples are then composited to 3 m for estimation.</p>
<i>Orientation of data in relation to geological structure</i>	<p>Predominant drill direction at Cowal is east-west; this is considered the best orientation to intersect the main controls on mineralisation in a normal manner. There is no apparent bias in terms of the drill orientation that has been noted to date. A number of south-north holes have been strategically drilled to confirm the existence of oblique mineralised structures to assist with geological interpretation and modelling.</p> <p>Additional holes that were drilled for the Stage H update were orientated at 030 or North-North-East for optimal mineralisation interception in the specific target area. Diamond holes were drilled from surface in an attempt to gain more geological understanding within the weathered top 100m of this area that had previously not been drilled. The majority of historical diamond holes were drilled at 60° inclination however parent holes of the FS were collared at 55° and following wedging and navigational cuts, some daughter holes finished as low as 20° inclination at EOH due to the target depth and pit wall angles limiting access. Infill drilling was done in some areas using in-pit RC to better define mineralisation directly below the existing Stage G pit floor.</p>
<i>Sample security</i>	<p>Drill contractors are issued with drill instructions by an Evolution geologist. The sheet provides drill hole names, details, sample requirements, and depths for each drill hole. Drill hole sample bags are pre-numbered. The drill holes are sampled by Evolution personnel who prepare sample</p>

Criteria	Commentary
<i>Audits or reviews</i>	<p>submission sheets. The submission sheet is then emailed to the laboratory with a unique submission number assigned. This then allows individual drill holes to be tracked.</p> <p>An SGS West Wyalong (SGS) representative collects the samples from site twice daily, however, if samples are being sent to other laboratories a local freight company is used to collect the samples from site and deliver them to the laboratory. Upon arrival, the laboratory sorts each crate and compares the received samples with the supplied submission sheet. The laboratory assigns a unique batch number and dispatches a reconciliation sheet for each submission via email. The reconciliation sheet is checked, and any issues addressed. The new batch name and dispatch information is entered into the tracking sheet. The laboratory processes each batch separately and tracks all samples through the laboratory utilising the LIMS system. Upon completion, the laboratory emails Standard Industry Format (SIF) files with the results for each batch to Evolution personnel.</p> <p>The assay batch files are checked against the tracking spreadsheet and processed. The drill plan is marked off showing completed drill holes. Any sample or QA/QC issues with the results are tracked and resolved with the laboratory.</p>
	<p>QA/QC Audits of the Primary SGS West Wyalong Laboratory are carried out on an approximately quarterly basis and for the Umpire ASL Orange Laboratory approximately on a six-monthly basis. Any issues are noted and agreed remedial actions assigned and dated for completion.</p> <p>Numerous internal audits of the database and systems have been undertaken by site geologists and company technical groups from North Ltd, Homestake, Barrick and Evolution. External audits were conducted in 2003 by RMI and QCS Ltd. and in 2011 and 2014 review and validation was conducted by RPA. Recent audits have found no significant issues with data management systems or data quality. Optiro conducted an external audit of Mineral Resource and Ore Reserve estimation process in 2019. No material issues were identified in the review.</p>

## Section 2 Reporting of Exploration Results

Criteria	Commentary																								
<i>Mineral tenement and land tenure status</i>	<p>The Cowal Mine is located on the western side of Lake Cowal in central New South Wales, approximately 38km north of West Wyalong and 350km west of Sydney. It is situated within the Bland Creek Valley, which is a region that supports mainly dry land agriculture with irrigation farming in the Jemalong/Wyldes Plains Irrigation Districts located to the northeast of the mining lease.</p> <p><b>Land and tenure</b></p> <p>Evolution has a total property holding of approximately 11,300ha at Cowal, which has been acquired to act as a physical buffer to reduce the effects of mining and processing activities on local landowners and the general public.</p> <p>Land within Mining Lease 1535 (ML) is a mixture of freehold owned by Evolution. A travelling stock reserve (TSR), a game reserve, and three unformed Crown roads were adjusted as part of the ML grant. The TSR has been relocated around the ML and the game reserve has been relocated to the south of the ML to maintain public access to Lake Cowal. The unformed Crown roads have been closed.</p> <p>Agricultural activities on Evolution landholdings are currently undertaken by a number of the previous owners and neighbours under licence agreements.</p> <p><b>Mineral Tenure</b></p> <p>The Cowal Mine tenement incorporates five contiguous exploration licences (EL) and one ML covering 1073 km<sup>2</sup>, as summarised in Table 1-1. All leases are 100% held by Evolution. The Cowal ML 1535 encompasses approximately 2,630 ha as allowed under the New South Wales Mining Act 1992.</p> <p>Table 1-1 Cowal Gold Mine Land Tenure</p> <table border="1"> <thead> <tr> <th>Tenement</th> <th>Area (km<sup>2</sup>)</th> <th>Expiry Date</th> </tr> </thead> <tbody> <tr> <td>EL 7750</td> <td>596</td> <td>May 27, 2022</td> </tr> <tr> <td>EL8524</td> <td>270</td> <td>March 02, 2023</td> </tr> <tr> <td>EL5524</td> <td>110</td> <td>Sept 16, 2018</td> </tr> <tr> <td>EL6593</td> <td>10</td> <td>Jul 06, 2019</td> </tr> <tr> <td>EL 1590</td> <td>61</td> <td>May 12, 2019</td> </tr> <tr> <td>ML 1535</td> <td>26</td> <td>June 12, 2032</td> </tr> <tr> <td>Total</td> <td>1,073</td> <td></td> </tr> </tbody> </table>	Tenement	Area (km <sup>2</sup> )	Expiry Date	EL 7750	596	May 27, 2022	EL8524	270	March 02, 2023	EL5524	110	Sept 16, 2018	EL6593	10	Jul 06, 2019	EL 1590	61	May 12, 2019	ML 1535	26	June 12, 2032	Total	1,073	
Tenement	Area (km <sup>2</sup> )	Expiry Date																							
EL 7750	596	May 27, 2022																							
EL8524	270	March 02, 2023																							
EL5524	110	Sept 16, 2018																							
EL6593	10	Jul 06, 2019																							
EL 1590	61	May 12, 2019																							
ML 1535	26	June 12, 2032																							
Total	1,073																								

Criteria	Commentary
	<p>The ML is granted by the Minister for Mineral Resources of the State of New South Wales (the Minister.) Obligations to retain the ML are detailed in the Conditions of Authority for the Mining Lease and outline all requirements for operating within the lease:</p> <p><b>Royalties</b> A New South Wales government royalty is applicable to Cowal, payable on the value of the processed gold. The royalty is calculated as follows:</p> <p>Royalty = 4% of {Total Revenue – Processing Costs – (33% of site Administration costs) – Depreciation}</p> <p>For financial evaluations, the 4% gross royalty has been equated to approximately 3% of the gold produced.</p> <p><b>Cultural Heritage</b></p> <p>A survey of aboriginal sites and artefacts on the mining lease was conducted under the Cowal Gold Mine Environmental Impact Statement submitted by North Ltd. (North) in 1998. The survey results and the registered Aboriginal sites identified in each management zone are outlined in the Cowal Gold Project Indigenous Archaeology and Cultural Heritage Management Plan (IACHMP) (Barrick, 2003).</p> <p>Aboriginal heritage sites which occur within ML 1535 and have been registered with the New South Wales Department of Environment, Climate and Water (DECCW). These sites range from open scatters to base camps to a sacred tree. Summaries of the survey results and the registered Aboriginal sites identified in each management zone are outlined in the IACHMP.</p> <p>All relevant permits and consents have been obtained under Section 87 and Section 90, respectively, pursuant to the National Parks and Wildlife (NPW) Act for the management of Aboriginal Heritage Artefacts at Cowal Gold Operation (CGO). All activities at CGO have been conducted in accordance with relevant permit and consent conditions and the IACHMP.</p> <p>All earthworks have been monitored and no non-compliances have been reported. Collection works have been undertaken at CGO by archaeologists with observation/participation of members of the Aboriginal community, in accordance with the permits and consents. All collected Aboriginal objects are currently retained in a Keeping Place within ML 1535.</p> <p>No items considered to be of important European heritage which cannot be disturbed have been found near the Project.</p> <p><b>Environmental status</b></p> <p>CGO has numerous documented operational phase environmental management strategies, management plans, and programs to meet the requirements of the February 1999 Development Consent and various Environmental Licences, Permits, and the Mining Operations Plan</p> <p>The E42 deposit has been developed generally in accordance with the Environmental Impact Statement (EIS) issued by North Ltd on March 13, 1998. This document details all environmental requirements that must be met prior to and during construction, during operations, and following the cessation of operations leading to the relinquishment of the tenements.</p> <p>Over the course of the mine life, CGO has submitted a number of applications to modify the development consent in line with various pit expansions, operating adjustments and mine life extensions. To Dec 2016 12 Modifications had been approved with Modification 13 permitted in February 2017 which gives regulatory approval to extend the mine life to 2032.</p> <p>There are no current environmental liabilities on the property. CGO has all required permits to conduct the proposed work on the property. There are not any other known significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the property.</p> <p>Before 1980 limited exploration and shallow gold mining activities were mainly constrained to the west of Lake Cowal in areas of better outcrop. No investigation of the lake was made due to virtually nil outcrop and up to 80m of Recent lacustrine sediments and the cyclical flooding.</p> <p>Following upon the success in the Goonumbla area, (now the Northparkes group of mines), the exploration company, Geopeko, identified the Cowal area as having some potential for porphyry copper development and subsequently conducted reconnaissance RAB drilling. By 1988 the company had broadly delineated the geology of the Cowal Igneous Complex (CIC) and a number of low grade porphyry copper deposits in the south of the CIC and had outlined an anomalous 0.1 ppm Au “gold corridor”, (approximately 2km by 7.5km), along the western margin of the lake which now includes the E41, E42, Galway/Regal and E46 deposits.</p> <p>Exploration continued into the early 1990s and a feasibility study of the E42 deposit, was completed in 1995. Provisional mining consent was obtained in 1999. In 2000, Rio Tinto acquired</p>

*Exploration done by other parties*

Criteria	Commentary
Geology	<p>North Ltd who subsequently sold to Homestake Mining in May 2001 by December 2001 Homestake had merged into Barrick Gold Corporation. Native title agreements were completed in 2003, culminating in the granting of ML1535 to Barrick Gold of Australia Limited. During this time extensive mineral resource/ore reserve definition drilling was undertaken. Construction began in 2004, with the first gold produced in 2006. The mine and exploration ground were purchased by Evolution Mining Ltd in 2015 and further drilling has continued to expand upon the resource of E42 and extend the gold corridor.</p> <p><b>Regional Geology</b></p> <p>Middle Ordovician arc volcanism associated with westward subduction resulted in the deposition of widespread mafic to intermediate volcanoclastic and turbiditic rocks and intrusive activity with associated porphyry copper and gold mineralisation throughout the central west of New South Wales. Remnants of the arc complex extend from Junee to Nyngan and include lithologies comprising the Northparkes Volcanic Group and the Lake Cowal Volcanic Complex. Arc volcanism and sedimentation ceased during the Late Ordovician to Early Silurian Benambran Orogeny. Deformation associated with the Benambran Orogeny initiated the Gilmore, Parkes and Coolac-Narromine Fault Zones. Intermittent igneous and volcanic activity continued in the region through to the Late Silurian.</p> <p>At the end of the Silurian, extension and marine incursion, (likely resulting from the retreat of the subduction zone), initiated the deposition of the sedimentary and volcanic rocks of the Ootha and Deriwong Groups. Rifting within the Ordovician volcanic arc separated the Lake Cowal and Northparkes Volcanic Complexes and produced the Jemalong Trough which underwent deposition through to the Early Devonian. A change in tectonic regime from extension to compression resulted in reverse movement along reactivated structures within the Gilmore, Parkes and Coolac-Narromine Fault Zones and the formation of the Booberoi fault.</p> <p>The last orogeny to affect the region was the Late Devonian to Early Carboniferous Kanimblan Orogeny which produced the Tullamore Syncline and the Forbes Anticline and reactivated the earlier major fault zones. Limbs of synclines in the Jemalong Trough were steepened and overturned during reverse faulting and parts of the Lake Cowal Volcanic Complex were thrust eastwards along the Marsden Thrust.</p> <p>The Cowal gold deposits (E41, E42, E46, Galway, and Regal) occur within the 40 km long by 15 km wide Ordovician Lake Cowal Volcanic Complex, east of the Gilmore Fault Zone within the eastern portion of the Lachlan Fold Belt. There is sparse outcrop across the Lake Cowal Volcanic Complex and, as a consequence, the regional geology has largely been defined by interpretation of regional aeromagnetic and exploration drilling programs.</p> <p>The Lake Cowal Volcanic Complex contains potassium rich calc-alkaline to shoshonitic high level intrusive complexes, thick trachyandesitic volcanics, and volcanoclastic sediment piles. The Cowal Complex is a strong regional magnetic high anomaly with a sharp linear western margin, represented by the Gilmore Fault Zone, separating the Lake Cowal Volcanics from the relatively low magnetic response of sediments to the west.</p> <p>Similar Ordovician magmatic rocks are found over a large area of the eastern Lachlan Fold Belt and are commonly associated with copper-gold mineralisation (e.g., Northparkes, Cadia, Peak Hill, and Gidginbung). The main diorite intrusion at E42 has a K-Ar dating of <math>456 \pm 5</math> Ma (Early to Mid-Ordovician). The gold deposits at Cowal are structurally hosted, epithermal to mesothermal gold deposits occurring within and marginal to a 230 m thick dioritic to gabbroic sill intruding trachyandesitic volcanoclastic rocks and lavas.</p> <p>The overall structure of the gold deposits is complex but in general consists of a faulted antiform that plunges shallowly to the north-northeast. The deposits are aligned along a north-south orientated corridor with bounding faults, the Booberoi Fault on the western side and the Reflector Fault on the eastern side (the Gold Corridor).</p> <p><b>Mineralisation</b></p> <p>The mineralisation at the Cowal Mine comprises four deposits: GRE46, E41, E42 and E46</p> <p>The GRE46 deposit is subdivided into the open pit and underground resources. The GRE46 zone trends north-south, dips vertical to <math>-70^\circ</math> west, and extends approximately 1500m along strike, 175m across strike and up to 800m down dip. Individual lenses in the GRE46 mineralised zone are 1.0m to 27m wide, 25m to 250m long, and extend 50m to 200m down dip. Lenses consist of narrow high-grade quartz carbonate, pyrite and base metal veins controlled within a structural north-south corridor, occasional zones of grade enrichment occur in dilatant structures within the</p>

Criteria	Commentary
	<p>deposit known as Quartz Sulphide Breccias. Host lithology varies from poorly mineralised massive intrusive diorites and fine volcanoclastic sediments through to the preferential host of trachyandesite lava, lenses of coarse to conglomeritic volcanoclastic sediments to the south and the Dalwhinnie Andesitic sill in the east.</p> <p>The E41 West mineralisation strikes north-northeast and dips <math>-70^{\circ}</math> east, and measures 750m along strike and 250 m across strike. Individual mineralised zones are 35 m to 50m wide and extend down dip for 125m. The E41 East mineralisation strikes east-west and dips <math>-35^{\circ}</math> to <math>-80^{\circ}</math> south, and measures 475m along strike and 500 m across strike. Individual mineralised zones are 35m to 50m wide and extend down dip for 225m.</p> <p>The E42 deposit dips <math>-35^{\circ}</math> to <math>-45^{\circ}</math> to the south west with an approximate extent of 850m by 850m and extends 500m down dip. Mineralisation is contained within small discontinuous veins contained within larger mineralised envelopes approximately 50m wide.</p> <p>The E46 deposit mineralisation trends north-northeast, dips <math>-40^{\circ}</math> west to flat-lying, and measures approximately 650m along strike and 17m across strike. Individual zones are approximately 50m wide and extend 200m down dip.</p>
<i>Drill hole Information</i>	No exploration results have been reported in this release.
<i>Data aggregation methods</i>	No exploration results have been reported in this release.
<i>Relationship between mineralisation widths and intercept lengths</i>	No exploration results have been reported in this release.
<i>Diagrams</i>	No exploration results have been reported in the release, therefore no diagrams have been produced.
<i>Balanced reporting</i>	No exploration results have been reported in the release.
<i>Other substantive exploration data</i>	No significant exploration activities have occurred during the reporting period.
<i>Further work</i>	Infill Resource definition is planned to convert Inferred category to Indicated category and to test for extensions to mineralisation along strike and down-dip.

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	Commentary
<i>Database integrity</i>	Cowal uses DataShed software system to maintain the database. Assay results, returned from the laboratory as digital files, are loaded directly into the database. The software performs verification checks including checking for missing sample numbers, matching sample numbers, changes in sampling codes, inconsistent “from-to” entries, and missing fields. Results are not entered into the database until the QA/QC Administrator approves of the results. A QA/QC report is completed for each drill hole and filed with the log, assay sheet, and other appropriate data
<i>Site visits</i>	The Competent Person for the Cowal Mineral Resource estimates is based at Cowal Mine, is part of the operational management team and reviews all aspects of the Mineral Resource informing data and estimations.

Criteria	Commentary
<i>Geological interpretation</i>	<p>Confidence in the geological interpretation is high. The interpretation is based on drilling that ranges from a 25m by 25m spacing to 50m by 50m spacing. The interpretation also incorporates data gathered from the mapping of exposures created by open cut mining which has been in operation continuously since 2005. The mapping has assisted in understanding the controls on mineralisation to improve the confidence in the geological interpretation. All available data from drilling and mapping is used in the geological interpretation. Petrological, litho-geochemical and structural studies have also been undertaken and have been used to develop the geological interpretation.</p> <p>The use of pit mapping and other production data such as grade control drill data has helped resolve the controls on mineralisation as such the current interpretation is relatively robust. An iterative process has been adopted with respect to the geological interpretation to ensure that it reflects the current understanding of the geology and controls on mineralisation.</p> <p>The factors that affect the continuity of grade and geology at Cowal are structure, lithology and alteration, in order of magnitude. Areas of higher grade are those where there is a greater frequency of structures intersecting the host lithology, such as the core of the E42 resource. These factors have been addressed in the interpretation and domaining of the resource and the estimation process.</p>
<i>Dimensions</i>	<p>The Mineral Resource area which incorporates the E41, E42, E46 and the GRE46 has the following dimensions, 4,200 m (north), 2,500 m (east) and 1,000 m (elevation).</p>
<i>Estimation and modelling techniques</i>	<p>GRE46 open pit model remained unchanged with a separate GRE46UG Model developed for underground resource optimisation.</p> <p>A review of the 2017 GRE46 model was undertaken to re-define domains with similar features and continuity of mineralisation. The review looked at primary material only. The resource estimation process has underlying assumptions that each domain shares similar characteristics.</p> <p>Top cutting of assay data is considered appropriate where outliers exist outside the lognormal distribution. These values have the potential to unduly bias grade estimates.</p> <p>A review was completed to establish the optimum search parameters for the kriging process. Search distances and kriging weights were examined for the effect on kriging variance, slope of regression and negative kriging weights.</p> <p>Individual domains were reviewed in terms of grade distribution using frequency histograms. 1m composites were formed for use in grade estimation for the GRE46UG model. The decision to use 1m composites for underground was based on the narrow nature of the veins. Surpac software was used to composite data.</p> <p>Estimation involved the use of Categorical Indicator Kriging (CIK) and Ordinary Kriging (OK) techniques to estimate grade into the domained model. CIK helps to define mineralised material above or below a defined threshold. Once defined OK techniques are used to estimate grade into the resource. A discretisation of 5 x 5 x 5 in the plane x, y, z was used with a minimum sample number of 12 and maximum of 32 for the estimate. Search ellipsoids are based on the modelled semi-variogram ranges for each domain.</p> <p>Parent block size for the GRE46UG model was selected at 10m x 10m x 10m. Ordinary kriging was completed on all domains and block grades were compared with composite of cut data to ensure kriging grades were represented in block grades. Swath plots were used to compare the modelled gold distributions in relation to composites as well as visual validation on 25m sections.</p> <p>An update of the E41W Open pit model was also conducted, to incorporate new drilling conducted in 2018. Like GRE46, the estimation approach was based on CIK and OK methodologies.</p> <p>Top cutting of assay data is considered appropriate where outliers exist outside the lognormal distribution. These values have the potential to unduly bias grade estimates.</p> <p>Individual lithology domains were reviewed in terms of grade distribution using frequency histograms. Domains were combined where differences in sample populations were deemed negligible or sample numbers inadequate.</p> <p>1m composites were formed for use in grade estimation for the E41W open pit. The decision to use 1m composites for open pit was based on comparisons between 1m and 3m composites which yielded little differences in means and distributions. Surpac software was used to composite data.</p> <p>A review was completed to establish the optimum search parameters for the kriging process. Search distances and kriging weights were examined for the effect on kriging variance, slope</p>

Criteria	Commentary
	<p>of regression and negative kriging weights.</p> <p>The estimation process used relatively large search distances and sample numbers due to the high nugget values. This resulted in a relatively smoothed grade estimate due to less predictable grade distributions. A discretisation of 5 x 5 x 3 in the plane x, y, z was used with a minimum sample number of 12 and maximum of 32 for the estimate. The smoothing effect is constrained through the creation of appropriate waste domains based on grade indicator model. Search ellipsoids are based on the modelled semi-variogram ranges for each domain.</p> <p>Parent block size for the open pit model was selected at 15m x 15m x 9m. Ordinary kriging was completed on all domains and block grades were compared with composite of cut data to ensure kriging grades were represented in block grades. Swath plots were used to compare the modelled gold distributions in relation to composites as well as visual validation on 25m sections</p> <p>No assumption of mining selectivity has been incorporated in the estimate.</p> <p>Only Au was estimated in the Mineral Resource, Ag which is a by-product of the processing has an assumed ratio of 1:1 with Au. Ag has not been accounted for in the estimation of Mineral Resources or Ore Reserves.</p> <p>Validation of the Mineral Resource comprised comparing block grades against the data used to inform the estimate on a domain by domain basis, visual comparison of the informing data against the estimate and the use of swath plots showing grade trends by easting northing and elevation of the input data against the estimate. For the E42 deposit the Mineral Resource was reconciled against production. To date reconciliation of the Mineral Resource against production is in line with resource classification applied and the expected confidence limits of the classification on a global basis.</p>
<i>Moisture</i>	<p>Mineral Resource tonnage estimates are on a dry basis.</p>
<i>Cut-off parameters</i>	<p>Mineral Resources for open pit are reported using a cut-off grade of 0.4g/t Au this reflects the cost and price assumptions derived from operational performance. GRE46UG Mineral resources used a 3g/t Au cut-off grade which reflects the increased costs and price assumptions from an underground operational performance.</p>
<i>Mining factors or assumptions</i>	<p>Mining factors are based on the current operation at Cowal, which has been operating continuously for the past thirteen years. The mining factors applied reflect the current open cut operation.</p> <p>The Cowal open pit Mineral Resource estimate is defined within an optimised pit shell using an A\$1,800/oz gold price assumption and based on the same detailed geotechnical design parameters, practical mining considerations and mining depletion at 31 December 2018 as the Cowal Ore Reserve. The Mineral Resource estimate also draws on the experience gained since mining commenced in April 2005 at Cowal.</p> <p>The GRE46 underground Mineral Resource estimate is defined by an underground mining shape optimiser using an A\$1800/oz gold price assumption. The mining method is assumed to be a selective narrow vein style; design parameters and practical mining considerations have been applied accordingly. It is assumed that metallurgical recovery will be similar to the E42 ore body.</p> <p>The Mineral Resource spatial constraining shells for the open pits are based on the cost structure of the owner mining rates at E42 open pit with a 20% reduction in unit mining costs due to automation. The autonomous mining system Pre-feasibility Study was completed in early 2019.</p> <p>The GRE46 Underground has been assumed to be mined by selective narrow vein techniques. A model has been developed that is fit for purpose considering this mining method.</p>
<i>Metallurgical factors or assumptions</i>	<p>Metallurgical assumptions are based on the performance of the Cowal processing plant which has been in continuous operation since 2006. All ore to date has been sourced from the E42 open pit. Oxide ore is stockpiled for later treatment. Sulphide ore is processed by crushing, two stage grinding, sulphide flotation, regrind, and CIL recovery. The plant currently processes 8.0Mtpa.</p>
<i>Environmental factors or assumptions</i>	<p>Cowal has a long history of mining and processing ore. Waste dump and residue disposal facilities are all currently in place in accordance with the required statutory approvals. The Cowal Mine currently has two Tailings Storage Facilities – the North Tailings Storage Facility (NTSF) and the South Tailings Storage Facility (STSF). The current TSFs are estimated to be insufficient to store the ore that will be processed according to the FY19 LOM plan. A new Integrated Waste Levee will begin construction in FY20 to adequately accommodate tailings</p>

Criteria	Commentary
	<p>in the current LOM plan.</p> <p>Cowal Mine has a Water Management System in place. The overall objective of the water management system is to contain potentially contaminated water generated within the Project area while diverting all other water around the perimeter of the site.</p> <p>The water management system has the following major components: Up-catchment diversion system; Lake isolation system (comprising the temporary isolation bund, lake protection bund and perimeter waste rock emplacement); and Internal catchment drainage system (comprising the permanent catchment divide and contained water storages).</p> <p>Although the new resources are located within the existing mining lease, any proposed mining extraction and processing will be subject to permitting and the completion of an Environmental Impact Study.</p>
<i>Bulk density</i>	<p>North Ltd. conducted density testing during the early stages of project development. These data were supplemented in 2002 by five dedicated holes across E42 to provide support for previous density estimates. Since production and mining began in 2005 systematic SG sampling has been conducted to continually validate resource model density.</p>
<i>Classification</i>	<p>The Mineral Resource classification is based on good confidence of the geological and grade continuity, 25m by 25m spaced drill hole density in the bulk of the resource and up to 50m by 50m spaced data in the peripheral parts of the resource. Ten years of continuous mining operations and the iterative use of 10m by 10m spaced grade control and production data have been used to refine the Mineral Resource estimate. Reconciliation of the Mineral Resource against production data supports the classification that has been applied to the Mineral Resource.</p> <p>Contiguous volumes were flagged with either Indicated or Inferred classification, no in-situ material is classified as Measured. Measured resources at Cowal are stockpiled material which has been grade controlled by very close spaced drilling.</p> <p>The Mineral Resource estimate appropriately reflects the view of the Competent Person and is assigned in accordance with the JORC 2012 guideline.</p>
<i>Audits or reviews</i>	<p>Roscoe Postle and Associates (RPA) audited the Resource Model in 2011 and 2014. No material issues were identified in the audits. Optiro audited the Resource Model in 2019. No material issues were identified in the audit.</p>
<i>Discussion of relative accuracy/ confidence</i>	<p>The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource in accordance with the guidelines of the 2012 JORC Code.</p> <p>The relative accuracy relates to a global mineral resource estimate of grade and tonnes.</p> <p>Reconciliation of the mineral resource estimate for the past calendar year reconciled 5% under on tonnes and 6% under on grade compared to the declared ore mined, with DOM metal being 10% higher than predicted by the model. Historically at Cowal there has been a consistent under-call of the Mineral Resource against production ranging 10% to 20% annually over the life of the mine. No factoring has been applied to the tonnes, grade or metal in the resource model.</p>

## Section 4 Estimation and Reporting of Ore Reserves

Criteria	Commentary
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	<p>The Ore Reserve estimate is based on the current Mineral Resource estimate as described in Section 3.</p> <p>The Mineral Resources reported are inclusive of those Mineral Resources modified to produce the Ore Reserve estimate.</p>
<i>Site Visits</i>	<p>The Competent Person is an employee of Evolution Mining Limited and has visited site. Validation of technical and economic assumptions used in the preparation of this Ore Reserve estimate occurred during this site visit.</p>
<i>Study Status</i>	<p>Cowal is a mature operation with over nine years of historical data. Ore Reserve estimates are generally consistent with current operating practices and experience. On this basis the analysis is considered at a higher level than a Feasibility Study.</p>
<i>Cut-off parameters</i>	<p>Ore Reserves for open pit are reported using a cut-off grade of 0.45g/t Au. This reflects the new cut-off grade calculation methodology which uses all operating ore costs at the end of the life of mine when ex-pit mining operations have ceased. This is a 0.05g/t increase from December 2017 reserve cut-off grade of 0.40g/t.</p>
<i>Mining factors or assumptions</i>	<p>The methodology used to convert the Mineral Resource to Ore Reserve can be described as optimisation of existing open pit operations through standard mine planning process steps of pit optimisation, mine design, mine schedule and financial modelling. Factors and assumptions have been formed from existing operating technical assumptions and cost models. On this basis the analysis is considered at a higher than feasibility study.</p> <p>Current mining at Cowal open pit is undertaken via conventional truck and excavator fleet to extract ore material to the ROM, waste material to the waste rock dumps and stockpiling and reclaim of lower grade material. The current operations demonstrate the appropriateness of this mining method as the basis of the Ore Reserve estimate for the E41, E46, GRE and E42 open pits. The In-Wall Ramp Ore reserve reported as part of the E42, differs from the above methodology as it also includes an In-wall ramp (developed with underground mining systems) to provide access for open pit mining and has a pre-feasibility study completed in 2018 for support.</p> <p>Ore dilution and recovery loss is specifically accounted for in the Mineral Resource modelling method and no additional mining dilution or recovery factors are applied to the Cowal Pit Ore Reserve estimate. This assumption is supported by the actual reconciliation between resource model and mill performance at Cowal to date being within acceptable uncertainty range for the style of mineralisation under consideration.</p> <p>External and internal Geotechnical studies are carried out to evaluate the operational designs. Ore Reserves are based on the most recent recommendations of pit slope berm, batter configuration.</p> <p>Inferred material is excluded from the Ore Reserves and treated as waste material, which incurs a mining cost but is not processed and hence does not generate any revenue. The optimisation evaluation shows the ultimate pit size is sensitive to Inferred Resources and will be the focus of future studies to improve geological confidence and convert into Ore Reserves.</p> <p>The selected mining method does not require additional infrastructure.</p>
<i>Metallurgical factors or assumptions</i>	<p>The ore is to be processed through an existing traditional CIP/ CIL process plant with the inclusion of the newly built Float Tails Leach circuit. The current and estimated future average throughput and recovery for gold is 8.0 to 9.8Mtpa and an average LOM recovery of 84% respectively. An operating history of over 13 years and metallurgical test work done by Barrick Australia Pacific in 2011 supports the metallurgical parameters used in the Ore Reserve estimation.</p> <p>The simplified Optimisation calculation for E42 used a mill recovery formula, calculated as follows:</p> $\text{Recovery} = (0.9330305 - (0.078245/G46)) * 100$ <p>with an upper cap placed at 88%</p> <p>E41, E46 and GRE recoveries were varied and followed work done by Barrick Australia Pacific in 2011.</p>

<i>Environmental factors or assumptions</i>	<p>Cowal E42 open pit is current with all environmental approvals and compliant to those conditions set out in such approvals. Current approvals are sufficient for the E42 Ore Reserves pit design to be completed.</p> <p>In relation to E41, E46 and GRE Open Pits Evolution is yet to obtain relevant statutory approvals, however it is proposed to seek approval under Part 4 of the EP&amp;A Act, as a State Significant Development CGO has no reason to expect that applications for variations to the current approvals for future mining additions will not be approved.</p>
<i>Infrastructure</i>	<p>The mine is currently in operation, thus current infrastructure is adequate to support future operation.</p>
<i>Costs</i>	<p>Capital and operating costs have been determined based on the current operating cost base modified for changing activity levels and reasonable cost base reductions over the life of the mine. On this basis the analysis is considered at a higher level than a Feasibility Study.</p> <p>Site unit operating costs are applied both as break even site cost used to determine ultimate pit shell and marginal site cost used to define ore waste cut-off boundary within the ultimate pit shell. The breakeven cost base is predicated on similar levels of site activity to recent history with planned cost improvements built in. The marginal cut-off cost base is based on the period of low-grade stockpile reclaim at the end of mine life. During this reclaim only period mining activity would have ceased and activity level across site would be dramatically reduced relative to current level.</p> <p>No cost impact is expected from deleterious elements and no costs have been included in the Ore Reserve estimate for these.</p> <p>State Royalties are 4%, payable on the value of the processed gold. The royalty is calculated as follows:  <math display="block">\text{Royalty} = 4\% \text{ of } \{ \text{Total Revenue} - \text{Processing Costs} - (33\% \text{ of site Administration costs}) - \text{Depreciation} \}</math> </p>
<i>Revenue factors</i>	<p>Revenue is calculated using a gold price A\$1,350/oz. A typical 3-year trailing average has not been used to set the commodity pricing. Instead a position has been set based on mean broker estimates and the company's longer-term view of these commodities.</p>
<i>Market assessment</i>	<p>Gold sold at spot price. Silver credits equate to approximately 1.5% of total revenue. All silver is sold at spot price. Silver estimates were not included during the optimisation process.</p>
<i>Economic</i>	<p>To demonstrate the Ore Reserve as economic it has been evaluated through a financial model. This process has demonstrated that the Ore Reserves for the Cowal open pit have a positive cash flow.</p>
<i>Social</i>	<p>Currently Evolution Mining has agreements with Traditional Owners and is on good terms with neighbouring pastoralists.</p>
<i>Other</i>	
<i>Classification</i>	<p>The Ore Reserves are predominantly derived from Indicated Resources. This classification is based on the density of drilling, the experience of 13 years mining of E42 and the mining method employed. The only Proved Reserves derived from Measured Resources are those reported in known and quantified stockpiles. It is the Competent Person's view that the classifications used for the Ore Reserves are appropriate.</p>
<i>Audits or reviews</i>	<p>This Ore Reserve has been reviewed externally by Optiro in 2019.</p>
<i>Discussion of relative accuracy/confidence</i>	<p>The accuracy of the estimates within this Ore Reserve are mostly determined by the order of accuracy associated with the Mineral Resource model, the metallurgical input and the long-term cost adjustment factors used. In the opinion of the Competent Person, the modifying factors and long-term cost assumptions used in the Ore Reserve estimate are reasonable.</p>