

# **Kairos and Federation Updates**

### **HIGHLIGHTS**

#### **Kairos**

- Underground drilling from the new lower Kairos decline intercepts very high grade gold and base metal mineralisation, including:
  - 11.5 metres at 38.4g/t Au & 9.7% Pb+Zn, including 2.6 metres at 115.3g/t Au & 13.2% Pb+Zn
  - 18.0 metres at 14.3g/t Au & 22.8% Pb+Zn, including 7.6 metres at 16.6g/t Au & 44.5% Pb+Zn
- High grade mineralisation remains open at depth with infill and extensional drilling ongoing
- Development has now intercepted Kairos lode at depth with first ore brought to surface; on track for first stope production late in the March 2021 quarter in line with schedule

#### **Federation**

- New high grade gold and base metal mineralisation intercepted in extensional drilling outside the June 2020 Mineral Resource envelope, including:
  - 14.1 metres at 4.8g/t Au & 35.0% Pb+Zn, including 5.3 metres at 8.9g/t Au & 46.5% Pb+Zn
  - 14.0 metres at 5.0g/t Au & 0.3% Pb+Zn, including 6.0 metres at 9.4g/t Au & 0.3% Pb+Zn
- Initial sequential flotation test work demonstrates potential for high metallurgical recoveries to separate saleable copper, lead and zinc concentrate products
- Environmental assessments underway to support an application to the NSW Resources Regulator for construction of an exploration decline at Federation

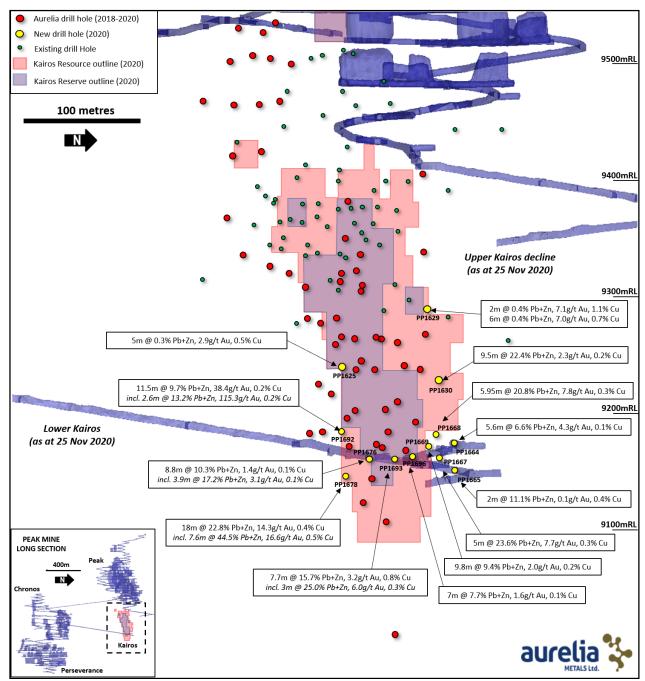
Aurelia Metals Limited (ASX: AMI) (**Aurelia** or the **Company**) is pleased to provide an update on current drilling and development activities in the Kairos area at the Peak Mine and at the Federation deposit, located ten kilometres south of the Hera Mine.

# KAIROS MOVES TOWARDS PRODUCTION WITH EXCEPTIONAL NEW INTERCEPTS

With development access now in place to the lower portion of the Kairos lode, high priority infill and extensional drilling is being conducted to confirm the tenor of the mineralisation in this area. Drilling has initially focussed on the first planned stoping levels at the base of the current Probable Ore Reserve (**Figure 1**). Results for thirteen new underground drill holes have been received, including a number of exceptionally high grade gold and base metal intercepts:

UD20PP1692	11.5 metres at <b>38.4g/t Au, 9.7% Pb+Zn, 19g/t Ag &amp; 0.2% Cu</b> , including 2.6 metres at <b>115.3g/t Au, 13.2% Pb+Zn, 21g/t Ag &amp; 0.2% Cu</b>
UD20PP1678	18 metres at <b>14.3g/t Au, 22.8% Pb+Zn, 23g/t Ag &amp; 0.4% Cu</b> , including 7.6 metres at <b>16.6g/t Au, 44.5% Pb+Zn, 37g/t Ag &amp; 0.5% Cu</b>
UD20PP1668	5.9 metres at <b>7.8g/t Au, 20.8% Pb+Zn, 28g/t Ag &amp; 0.3% Cu</b>
UD20PP1667	5.0 metres at <b>7.7g/t Au, 23.6% Pb+Zn, 35g/t Ag &amp; 0.3% Cu</b>
UD20PP1630	9.5 metres at 2.3g/t Au, 22.4% Pb+Zn, 22g/t Ag & 0.2% Cu





**Figure 1**. Long section looking west showing the Kairos deposit with significant intercepts from recent underground drilling. Progress of the upper and lower decline development headings are also shown.

Drill hole details for the latest Kairos drilling program and a full list of significant intercepts are shown in **Tables 1 & 2**, respectively.

Encouragingly, all thirteen holes produced ore-grade intercepts, which is of particular significance in the sparsely drilled lower portions of the Kairos Resource. A number of the infill holes have extended gold and base metal mineralisation along strike to the north, whilst the exceptional gold in UD20PP1678 (18.0 metres at 14.4g/t Au & 22.8% Pb+Zn) leaves the area along strike to the south and at depth open (**Figure 1**). Drilling continues with additional infill and extensional holes planned to test the lode at depth.

A significant milestone for the Kairos project was also reached during November with the first ore from the Kairos lode brought to the surface as the level development intercepted the lode. Excavation of the lower exhaust raise is underway following the start of raisebore reaming in November. An escapeway will be installed following the completion of the lower exhaust raise and prior to first Kairos stope production late in the March 2021 guarter.



# **EXTENSIONAL DRILLING DELIVERS UPSIDE AT FEDERATION**

Earlier this month the Company announced further exceptional gold and base metal results from resource infill drilling within the high grade north-eastern zone at Federation, including 25.5 metres at 37.5% Pb+Zn & 11.4g/t Au in FRCD074 (see ASX release 4 November 2020). Assay results have now been received for additional infill and extensional drilling, including:

FDD099	14.1 metres at <b>35.0% Pb+Zn, 4.8g/t Au, 19g/t Ag &amp; 0.4% Cu</b> from 172.9m, <i>includes</i> 7.4 metres at <b>46.5% Pb+Zn, 8.9g/t Au, 24g/t Ag &amp; 0.2% Cu</b> from 172.9m
FDD098	14.0 metres at <b>0.3% Pb+Zn &amp; 5.0g/t Au</b> from 55m, <i>includes</i> 7.0 <i>metres at</i> <b>0.3% Pb+Zn &amp; 9.4g/t Au</b> from 56m
FDD105	26.5 metres at <b>15.1% Pb+Zn, 0.5g/t Au, 7g/t Ag &amp; 0.2% Cu</b> from 426m, <i>includes</i> 7.9 <i>metres at</i> <b>32.0% Pb+Zn, 1.6g/t Au, 16g/t Ag &amp; 0.6% Cu</b> from 443m
FDD101	8.5 metres at <b>16.5% Pb+Zn</b> , <b>0.3g/t Au</b> , <b>7g/t Ag &amp; 0.9% Cu</b> from 152.5m, <i>includes</i> 4.1 metres at <b>31.5% Pb+Zn</b> , <b>0.3g/t Au</b> , <b>12g/t Ag &amp; 0.8% Cu</b> from 153.9m
	8.5 metres at 15.7% Pb+Zn, 0.1g/t Au, 10g/t Ag & 0.6% Cu from 217m

Full drill hole details are provided in **Table 1** and a list of significant new results received for the Federation deposit are detailed in **Table 3**.

The presence of high grade gold in FDD099 and FDD098 is significant as both are relatively shallow extensional intercepts occurring outside the June 2020 Mineral Resource envelope. The intercept in FDD098 is above the base of oxidation and, at only 50 metres below surface, represents the shallowest high grade mineralisation encountered to date. The strong base metal and gold mineralisation in FDD105 is also highly encouraging as the focus turns to upgrade and extension of other areas of the Federation deposit outside the main high grade north-eastern lens (**Figure 2**).

Intensive drilling will continue at the site with project personnel targeting new areas with strong gold potential. The new drill results will be incorporated into an updated Mineral Resource Estimate for Federation, which is expected to be completed early in the March 2021 quarter.

# FEDERATION SCOPING STUDY AND APPROVALS

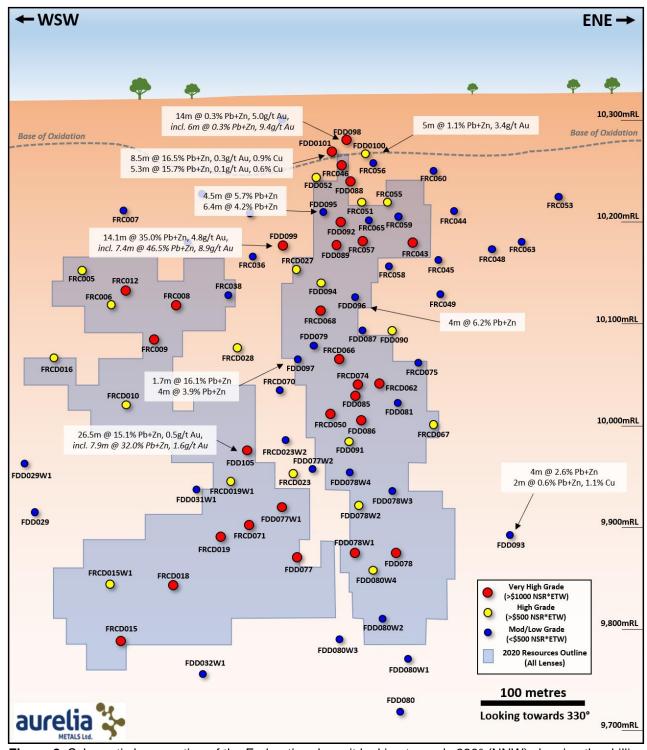
As a part of the Federation Scoping Study, Aurelia has been investigating the potential to produce separate zinc, lead and copper concentrate products (along with gold) from the Federation deposit. Preliminary results from sequential flotation test work demonstrate that it is possible to produce separate saleable concentrates from typical Federation mineralisation at indicative recoveries greater than 85% for lead and zinc, and greater than 81% for copper.

Further improvements are expected as the flowsheet is refined, with work underway to establish gold recoveries to the various gravity and flotation streams. The inclusion of copper as a payable product from Federation, along with the improved commercial terms available with separate lead and zinc concentrates, is expected to enhance the project economics and mine life through increased margins.

Aurelia is also preparing an application to the NSW Resources Regulator seeking approval for an exploration decline. The proposed exploration decline will provide access the deposit, ahead of any full project approval, for the purposes of intensive exploration drilling and bulk sampling. Specialist environmental assessments are being conducted over the Federation site in support of this application.

Further, a Statement of Environmental Effects (SoEE) is being prepared to obtain local government development consent for an expansion of the Hera camp. The supplemental accommodation will be required to support the current and future work programs at Federation and Hera.





**Figure 2**. Schematic long section of the Federation deposit looking towards 330° (NNW) showing the drilling pierce points and the current Resource.

This announcement has been approved for release by the Board of Directors of Aurelia Metals.

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# **Competent Persons Statement**

The information in this report that relates to Exploration Results is based on information compiled by Adam McKinnon, BSc (Hons), PhD, who is a Member of the Australasian Institute of Mining and Metallurgy. Dr McKinnon is a full-time employee of Aurelia Metals and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' Dr McKinnon consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Table 1. Collar summary for the drill holes reported in this release.

Table 1. Colle	Fable 1. Collar summary for the drill holes reported in this release.							
Prospect	Туре	Hole ID	Easting (MGA)	Northing (MGA)	Local RL (m)	DIP	Azimuth (MGA)	Total Depth (m)
Kairos	UG DDH	UD20PP1625	393306	6507335	9425	-49.0	95.0	450.0
Kairos	UG DDH	UD20PP1629	393306	6507335	9425	-39.0	72.0	299.9
Kairos	UG DDH	UD20PP1630	393306	6507335	9425	-48.0	70.0	449.7
Kairos	UG DDH	UD20PP1664	393420	6507384	9150	8.2	44.1	164.3
Kairos	UG DDH	UD20PP1665	393420	6507383	9149	-6.9	43.0	152.4
Kairos	UG DDH	UD20PP1667	393420	6507384	9150	0.7	50.4	149.5
Kairos	UG DDH	UD20PP1668	393420	6507384	9150	9.9	53.0	180.0
Kairos	UG DDH	UD20PP1669	393420	6507384	9150	5.2	62.0	149.0
Kairos	UG DDH	UD20PP1676	393420	6507383	9149	-2.6	94.3	143.7
Kairos	UG DDH	UD20PP1678	393421	6507382	9149	-8.8	105.9	151.3
Kairos	UG DDH	UD20PP1692	393420	6507383	9150	11.2	108.8	137.6
Kairos	UG DDH	UD20PP1693	393420	6507383	9149	-2.6	78.6	131.7
Kairos	UG DDH	UD20PP1696	393420	6507384	9150	-2.6	68.2	130.0
Federation	RC/DDH	FRCD074	434250	6436917	10323	-60.0	41.0	717.8
Federation	DDH	FDD093	434322	6437322	10320	-63.8	139.7	747.8
Federation	DDH	FDD095	434234	6437067	10324	-59.5	124.0	321.5
Federation	DDH	FDD096	434216	6437085	10323	-60.5	114.7	405.5
Federation	DDH	FDD097	434148	6437081	10322	-60.6	113.7	399.6
Federation	DDH	FDD098	434312	6436985	10324	-60.0	15.3	252.8
Federation	DDH	FDD099	434171	6437057	10323	-60.4	111.6	322.1
Federation	DDH	FDD100	434330	6436971	10324	-61.1	17.6	245.2
Federation	DDH	FDD101	434327	6436978	10327	-65.0	337.0	200.0
Federation	DDH	FDD105	433988	6437199	10318	-58.2	114.4	640.0



Table 2. Significant new intersections for the Kairos drill holes reported in this release.

Table 2. Significa	I I I I CW II I		113 101 111	Citanos		Г	u III tilio	reiease.		
Hole ID	Interval (m)	ETW <sup>1</sup> (m)	Pb (%)	Zn (%)	Pb+Zn (%)	Au (g/t)	Ag (g/t)	Cu (%)	NSR <sup>2</sup> (A\$)	From (m)
UD20PP1625	5	4.0	0.1	0.2	0.3	2.9	2	0.5	\$163	289
UD20PP1629	3.15	2.6	3.8	4.9	8.8	0.1	8	0.1	\$217	226.85
	2	1.7	0.1	0.3	0.4	7.1	2	0.7	\$356	247
	6	5.0	0.0	0.4	0.4	7.0	1	0.0	\$339	259
UD20PP1630	9.5	7.0	7.0	15.4	22.4	2.3	22	0.2	\$707	286
UD20PP1664	5.6	5.1	1.9	4.7	6.6	4.3	12	0.1	\$380	85.9
UD20PP1665	2	1.8	3.6	7.6	11.1	0.1	44	0.4	\$315	87
UD20PP1667	5	4.8	7.5	16.2	23.6	7.7	35	0.3	\$992	81
UD20PP1668	5.95	5.7	8.3	12.5	20.8	7.8	28	0.3	\$886	81.35
UD20PP1669	9.8	9.7	2.5	6.9	9.4	2.0	13	0.2	\$353	100.2
UD20PP1676	8.8	8.1	3.7	6.6	10.3	1.4	12	0.1	\$333	84.8
includes	3.9	3.6	6.3	10.9	17.2	3.1	21	0.1	\$590	84.8
UD20PP1678	18	14.7	9.2	13.6	22.8	14.3	23	0.4	\$1,231	92.1
includes	7.6	6.2	17.6	26.9	44.5	16.6	37	0.5	\$1,888	92.1
UD20PP1692	11.5	8.8	4.2	5.5	9.7	38.4	19	0.2	\$2,022	94.5
includes	2.6	2.0	4.5	8.7	13.2	115.3	21	0.2	\$5,688	95
UD20PP1693	7.7	7.6	7.3	8.3	15.7	3.2	19	0.8	\$531	80.1
includes	3	3.0	12.7	12.3	25.0	6.0	28	0.3	\$852	84
UD20PP1696	7	7.0	2.8	4.9	7.7	1.6	15	0.1	\$274	75

<sup>1 \*</sup>ETW = estimated true width

<sup>&</sup>lt;sup>2</sup> Net Smelter Return ('**NSR**') is the Company's estimate based on factors including metals prices, metallurgical recoveries, payabilities and other offsite costs. Full details of the basis of the Company's NSR calculations are set out in the report "Group Mineral Resource and Ore Reserve Statement" released to the ASX on 22 July 2020, a copy of which is available to view at <a href="https://www.aureliametals.com.au">www.aureliametals.com.au</a>.



Table 3. Significant new intersections for Federation drill holes reported in this release

Table 3. Significar										
Hole ID	Interval (m)	ETW <sup>1</sup> (m)	Pb (%)	Zn (%)	Pb+Zn (%)	Au (g/t)	Ag (g/t)	Cu (%)	NSR <sup>2</sup> (A\$)	From (m)
FRCD074 <sup>3</sup>	11	2.3	1.3	0.3	1.7	0.3	4	1.2	\$39	179
	25.5	5.3	16.2	21.4	37.5	11.4	17	1.2	\$1,192	300.5
includes	9	1.9	22.1	24.8	46.9	28.9	11	1.9	\$2,268	305
	3	0.6	2.1	5.9	8.0	0.0	5	0.0	\$129	452
FDD093	2	1.5	0.7	1.4	2.1	0.0	4	0.0	\$34	499
	2	1.5	0.6	1.5	2.1	0.0	2	0.1	\$35	509
	4	1.5	2.3	0.3	2.6	0.0	10	0.0	\$39	594
	2	1.5	0.4	0.2	0.6	0.0	28	1.1	\$27	630
FDD095	4.5	2.3	2.2	3.5	5.7	0.0	3	0.2	\$89	132.2
	6.4	3.2	2.3	1.8	4.2	0.0	3	0.0	\$63	152.45
	2.5	1.3	3.1	1.0	4.1	0.3	7	0.6	\$72	202
	2	1.0	1.6	1.8	3.4	1.0	3	0.2	\$106	210
FDD096	4	2.4	1.6	0.5	2.2	0.0	5	0.5	\$33	213
	4	2.4	1.5	1.2	2.7	0.2	3	0.1	\$53	239
	4	2.4	4.2	1.9	6.2	0.0	5	0.0	\$91	276
FDD097	1.7	1.1	5.8	10.3	16.1	0.2	9	0.3	\$261	267.6
	4	2.5	1.8	2.1	3.9	0.0	3	0.2	\$61	283
FDD098 <sup>4</sup>	14	5.9	0.3	0.0	0.3	5.0	0	0.0	\$273	55
includes	6	2.5	0.3	0.0	0.3	9.4	0	0.0	\$509	56
	24.6	10.4	11.4	22.8	34.2	0.1	13	0.2	\$543	165.4
includes	8.45	3.6	20.1	40.7	60.9	0.1	18	0.0	\$958	177
FDD099	14.1	6.4	10.2	24.7	35.0	4.8	19	0.4	\$813	172.9
includes	7.4	3.4	13.0	33.5	46.5	8.9	24	0.2	\$1,221	172.9
FDD100	5	1.7	0.9	0.1	1.1	3.4	2	0.1	\$201	86
FDD101	8.5	4.0	5.3	11.3	16.5	0.3	7	0.9	\$276	152.5
includes	4.1	2.0	9.6	21.9	31.5	0.3	12	0.8	\$511	153.9
	2	1.0	5.5	14.0	19.5	0.1	11	0.5	\$312	204.7
	5.3	2.5	5.8	9.9	15.7	0.1	10	0.6	\$247	217
FDD105	26.5	20.8	5.4	9.8	15.1	0.5	7	0.2	\$264	426
	7.9	6.2	11.3	20.8	32.0	1.6	16	0.6	\$586	443

<sup>1 \*</sup>ETW = estimated true width, based on assumed sub-vertical lode orientation striking at 060°

<sup>&</sup>lt;sup>2</sup> Net Smelter Return ('NSR') is the Company's estimate based on factors including metals prices, metallurgical recoveries, payabilities and other offsite costs. Full details of the basis of the Company's NSR calculations are set out in the report "Maiden Federation Resource Estimate" released to the ASX on 9 June 2020, a copy of which is available to view at  $\frac{www.aureliametals.com.au}{^{3}\,\text{Interval from 300.5 metres down hole previously announced (see ASX release 4 Nov 2020)}.$ 

<sup>&</sup>lt;sup>4</sup> Interval from 165.4 metres down hole previously announced (see ASX release 4 Nov 2020).



### **PEAK MINE**

**JORC Code 2012 (Table 1)** - Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. AusIMM. **Section 1** - Sampling Techniques and Data (Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	Underground exploration and resource definition at Peak Gold Mines utilises diamond drill holes in fresh rock with close to 100% recovery. The core is predominantly BQ or LTK48 where resource definition is undertaken and is whole core sampled at metre intervals. NQ2 core is used for underground exploration and evaluation and is half core sampled in metre intervals. Surface diamond drilling is undertaken at PQ, HQ and NQ core sizes. PGM has employed Swick Mining Services since 2008 as their preferred underground drilling contractor to maintain quality in core handling. The core is processed in an established core yard with racks, water and cover.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	A continuous series of pre-numbered bags is employed so that duplication of sample numbers is not likely. Computer control of core yard systems for ledger generation and specific gravity. Drilling run errors affecting mark-up are dealt with by the contractor crew responsible ensuring they take more care. All samples are analysed for specific gravity. Sample weights show consistency with regards to core recovery. Standards are submitted at a frequency of 1 in 20 with every submission. A blank is put at the beginning of every job. Silica flushes are used between samples around visible gold observations. Standard fails are subject to reassay. A selection of pulps is taken yearly from the ore intervals for re-assay at another lab as a comparison of repeatability and lab precision. The core saw equipment is regularly inspected and aligned so the core is cut in even halves.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	Up to 100% of the core can be sampled but is generally restricted to all intervals that have alteration, mineralisation and shearing. Sampling is continuous and perpendicular to strike of the lodes reported. The entire metre of whole BQ or half NQ is completely crushed to 3mm and 100g is riffle split and pulverised to 90% passing 75 microns. All gold assays are 50g fire assay (Method Au – AA26) with a detection level of 0.01ppm and base metals by 4 acid digest (method ME-ICP61) with detection levels of: Ag-0.5ppm, Cu-0.01ppm, Pb-0.01ppm, Bi-1ppm, Zn-0.01ppm, S-0.01%, Fe-0.01%. Over limit analysis is by OG62- with Sulphur over range by method S-IR08 at ALS laboratories. Every core sample submitted for assay is submitted for specific gravity analysis at PGM by wet balance method (Archemedes method). The SG process is checked with a standard 1 in 20 and water temperature is also recorded.



Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, openhole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc.).</li> </ul>	The variety of core sizes (LTK48, BQ, NQ2, HQ and PQ) are used at the Peak Mines depending on drill hole spacing, depth and angle of hole. The holes are surveyed every 30m with a 15m survey at the beginning of the hole and end of hole survey. The underground holes are drilled with a jumbo mounted LM90 diamond rig supplied by SMS drilling.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	Drillers record core loss whilst drilling with core blocks in the run. The location of loss is also recorded on sample submission sheets. The estimated meterage of the core loss depends on how the core is pieced together. Sample weights of the assayed intervals are assessed to give another quantitative estimate of recovery.  Generally good drilling equipment and experience minimise core loss. The core is pieced together where possible, ensuring the core has been placed in the tray the right way around and is a check on the run lengths. At all times the core is handled with care with transportation using proper tie down points.  Whole core sampling of the BQ core eliminates sample bias from having to half the core. When sampling NQ core the cut line is perpendicular to structures. There is no known relationship between sample recovery and sample grade in these samples.
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	Geological domains are much larger than the mineralisation and in most cases it is possible to drill continuously through the ore zone. For mine delineation drilling lithological information is gathered to 10cm intervals into tables defining lithology, mineralisation, alteration and shearing. Mine delineation is not oriented so structural measurements are taken in relation to the regional foliation which is considered to be constantly orientated. Broader stratigraphical and structural units are captured in an interp table. All of the deposits have defined structural zones across strike. Major lithologies are wireframed to ensure continuity of the interpretation. Exploration core is oriented so structural measurements are accurate also magnetic susceptibility is measured at 1m intervals where appropriate. Rock mass quality information, to support engineering considerations, are logged and Q primed is calculated. Further to rock mass quality data, rock strength data is gathered for mining studies. Metallurgical samples are initially recovered as part of exploration or evaluation programs from either half or quarter core.  All core is photographed. The core is photographed using a mobile frame over individual trays ensuring that light and focus conditions remain constant. Structural measurements are measured against the dominant regional S2 foliation based on quality of observation. Visual estimates of minerals in percent are checked against assay data. Magnetic susceptibility is recorded for specific intervals during exploration programs.  All core and chips are 100% logged for lithology, stratigraphy, mineralisation, alteration, RMQ, structure, and shear using Coreview software.



Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether Quarter, half or all core taken.	LTK48 and BQ core is whole core sampled so no subsampling is done on delineation drilling. NQ2 and HQ core is half core sampled and cut with an almonte automatic saw leaving the other half of the core for possible re-assay or metallurgical use.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No non-core sampling is described in this report
	For all sample types, the nature, quality and appropriateness of the sample preparation	For a sample of core being assayed for grade the same regime is followed as explained in sampling techniques above.
	technique.	The sampling procedures for quality control are outlined under sampling techniques above.
	<ul> <li>Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.</li> </ul>	Twinning holes and second half core sampling is usually adopted during exploration projects. High density drilling is also employed in the main mining areas.
	<ul> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second- half sampling.</li> </ul>	Variability and nugget effects produces complications when sampling for coarse gold have been address by PGM. The sample size of drill core is adequate to capture gold at the micron size range. The ore bodies with the higher CV's are drilled at a closer spacing to minimise risk.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of assay data and laboratory test	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> </ul>	Samples dry for 12 hours at 104°C in oven. Samples are crushed to <3mm and pulverised to 90% passing 75um in and LM5 pulveriser. 250 grams of sample is scooped from the bowl. Sizing tests are performed every 10 samples. Barren wash is used between samples. 50 grams is scooped from the 250 grams for fire assay. Four acid digest is used to determine base metals. Fire assay and four acid digest are methods considered as total element analysis.
	For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in	The suite of elements assayed and the lad methods used are considered adequate for resource reporting.
	determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No geophysical tools were used in the determination of assay results. All assay results were generated by an independent third-party laboratory as described above.
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory	A blank is submitted at the start of every hole. Standards are submitted at a frequency of 1 in 20. Standard fails are followed up with 10 sample repeats adjacent to the standard that failed. Replicates and duplicates are done by ALS at a frequency of 1 in 20. Standards, replicates and duplicates are graphed at regular intervals to determine accuracy and precision. The standards are supplied by Gannet Holdings Pty Ltd and Geostats. Standards have been both matrix matched and non-matrix matched. Between 300 and 500 pulps are selected from ore samples and sent for check assay at another lab annually.



Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	Extreme high grades (>100ppm Au) are repeated as a matter of course. The database is used by all geologist and engineers on the PGM site. A third party audit is performed annually and performs analysis on the data. During annual pulp checks certain intersections are repeated in full.  The use of twinned holes is generally restricted to exploration – deeper holes that have resource estimated around them are replaced with grade control drill holes and left out of the data set as this occurs.  Physical and electronic copies exist of drill designs, downhole surveys and assay data. Raw laboratory data is filed as it comes from the lab. The assay .CSV file from the lab is manipulated by an excel add-in routine to suit the load query in the geological database "Drillview". The database has a verification sequence which checks end of holes and overlapping intervals. All data entry procedures are documented. Historic hard copies are stored in a fire proof room. Electronic data is backed up weekly, monthly and yearly and stored in a fire proof safe on site.
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used</li> <li>Quality and adequacy of topographic control.</li> </ul>	Surface drill hole collars are initially located using hand held GPS to ±5m. Upon completion collars are located with differential GPS to ±5cm. Underground collars are picked up by the mine surveyor (collar position and dip/azimuth) using a Total Station Theodolite. Downhole surveys are taken using a reflex camera. Eastman single shot cameras were phased out in 2007. Readings with abnormal magnetics are flagged unreliable in the database. The reflex camera is used for multi shot where required and giro cameras ore used in highly magnetic ground. Check surveys are done weekly in a test bed on surface. Reliability is checked in Excel. A resurvey is done if out of limits. Two fails and instrument is sent away and replaced. Collar surveys are as accurate as the mine survey which is subject to regulatory re-survey on an interval basis.  PGM uses a metric mine grid that is -15° 31' 38.72201 degrees to MGA grid. There is an additional 10,000.4m added to the AHD. Magnetic drilling surveys are corrected by 25 degrees.  The PGM grid was aligned with the state MGA grid in Feb 2009. Existing surface survey control consists of two baselines each with two high order stations registered with SCIMS on both the Peak and New Cobar leases. All exploration holes and topographic features are fixed using RTK GPS.
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological</li> </ul>	Underground drill hole spacing for Reserves is between 10m and 30m spacing depending on the type and complexity of the mineralisation. Surface exploration results are replaced by delineation drilling as a mine progresses to depth. Drill spacing away from the main mineralised lodes is generally wider spaced and dependent on the stage of exploration.



	<ul> <li>and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	The resource is classified on the following drill hole centres and search distances depending on the type and complexity of the mineralisation:  Measured – range 15mx15m to 25mx25m Indicated – range 30mx30m to 50mx50m Inferred – range 60mx60m to 75mx75m The confidence in classification is considered consistent with the 2012 JORC code.  The majority of drill holes are sampled at one metre intervals and compositing is at 1m intervals.
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	All ore bodies are near vertical. The drill hole orientation is designed to be across the width of the lode. This is adequate where the mineralised structures are sub-parallel to the regional foliation.  Underground mapping has located some structures that are sub-parallel to the drilling direction. The drilling density off-sets any bias associated with such intercepts and additional drilling from other directions has been done. These structures are generally secondary to the main lode and of short strike length.
Sample security	The measures taken to ensure sample security	Core is stored in a lockable yard within the Peak site. The Peak site has 24 hour manned gates and requires swipe card access given only to Peak personnel. Samples are placed in tied calico bags with sample numbers that provide no information on the location of the sample.
Audits or reviews	The results of any audits or reviews of sampling techniques and data	H&SC audited PGMs core yard in 2008. No concerning issues arose in regards to the procedures of core mark up, photography, RQD measurement, cutting, core density, packaging and dispatch. Continuous improvements have been made by PGM with the implementation of roller racks, air conditioned sampling sheds, re-plumbing of water supply to the racks and the introduction of blue metal as a blank check. Previously PGM was using non mineralised core mainly from the beginnings of New Occidental delineation holes representing the barren Great Cobar Slate. Drill hole data is reviewed by H&SC during the resource audits and measures of drill hole deviation and assay ranges are scrutinised and verified.



Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	In August 2012 a notice of application for determination of native title was made in central NSW, which encompassed all of Peak Gold Mines mineral tenements. Legal advice indicated that Crown land may be claimable, so exploration has been delayed over this land tenure until it can be established if native title has been extinguished or if an access agreement with the claimants will be required. This effects areas within EL5933 (Wrightville Common & Kaloogleguy Regeneration Reserve) and EL7355 (Cumbine State Forest). The following table is a list of tenements held in full or part by PGM.  Tenement Name Ownership  CML6 Fort Bourke Hill PGM 100%  CML7 Coronation PGM 100%  CML8 Peak/Occidental PGM 100%  CML9 Queen Bee PGM 100%  ML1483 Fort Bourke Hill PGM 100%  ML1483 Fort Bourke Hill PGM 100%  EL5933 Peak PGM 100%  EL6401 Rookery East PGM 100%  EL6401 Rookery East PGM 100%  EL6401 Rookery East PGM 100%  EL7355 Nymagee East PGM 100%  EL8523 Margaret vale PGM 100%  EL8523 Margaret vale PGM 100%  EL8548 Narri PGM 100%  EL8548 Narri PGM 100%  EL8549 Norma Vale PGM 75%, Zintoba 25%  EL6127 Rookery South PGM 83%, Lydail 17%  PGM continues to fulfil all requirements of tenement ownership, including reporting obligations, timely renewals, expenditure commitments, environment permitting and rehabilitation. All tenements are held securely.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Exploration has been ongoing since early 1900. Extensive exploration has occurred under CRA, Wheaton River, Goldcorp, Newgold and Aurelia Metals.



Geology	Deposit type, geological setting and style of mineralisation.	The deposits fall under the group of epigenetic "Cobar-Style" mineralisation and are controlled structurally by major fault zones (Rookery Fault System) and subsequent spurs and splays. The faults are within of the Devonian-Nurri Group of sedimentary units displaying lower green schist facies alteration. The economic minerals are contained within quartz stockworks and breccias. The breccia matrix are combinations of quartz, sediment, rhyolite and sulphide. The deposits are often polymetallic with gold, copper, silver, lead and zinc occurring in parallel lenses to the fault zones within the PGM leases.
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar of elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	All relevant data drill hole data is included in the main body of the report.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	Exploration results reported on a length-weighted basis. No top-cut or grade truncations have been applied to any assay results. Composite intervals are reported using a nominal \$50 NSR cut-off for Peak North results.  Higher results that occur internal to the composited intervals as described above are included in this report. Higher grade intervals are only highlighted if there are areas within the composite that differ significantly from the overall grades. Reporting of the shorted intercepts allows a more complete understanding of the grade distribution within the mineralised zone.  No metal equivalences are quoted in this report.



Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole is known, its nature should be reported.</li> <li>If unknown and down hole lengths are reported, there should be a statement to the effect (e.g. 'down hole length, true width not known').</li> </ul>	The extensive exploration and mining history in the Peak Mines mean the geometry of the ore zones is very well understood. As such, estimated true widths are included in this report.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	See body of report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All available new drill results from the recent program are given in this report.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	See body of report.
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	See body of report.



# **FEDERATION**

**JORC Code 2012 (Table 1) -** Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. AusIMM. **Section 1 -** Sampling Techniques and Data (Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	<ul> <li>RC percussion and diamond core drilling at Federation has been undertaken by Budd Exploration Drilling Pty Ltd and Mitchell Services Limited.</li> <li>Chip samples were collected using a rotary cone or riffle splitter directly off the drill rig. All samples were collected on a dry basis.</li> <li>Core samples were defined by Aurelia geologist during logging to honour, geological and mineralogical boundaries, cut in half by diamond saw, with half core sent to external laboratories.</li> </ul>
	<ul> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> </ul>	<ul> <li>Sampling and QAQC procedures are carried out using Aurelia Metal's protocols as per industry best practice.</li> <li>Drilling is oriented perpendicular to the strike of the mineralisation as much as possible to ensure a representative sample is collected.</li> </ul>
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• RC drilling was used to obtain representative samples of 1 metre length. Diamond drilling was used to obtain core samples of a nominal 1 metre length. RC chips were sub-sampled off the rig with a rotary cone or riffle splitter to produce samples of between 2 to 4 kg. Core and RC samples are dried, crushed and pulverised to 85% passing 75 microns. This is considered to appropriately homogenise the sample. Gold analysis is by 30g fire assay with AAS finish, (method Au – AA25) with a detection level of 0.01ppm. For base metals a 0.5g charge is dissolved using aqua regia digestion (Method ICP41-AES) with detection levels of: Ag-0.2ppm, As-2ppm, Cu-1ppm, Fe-0.01%, Pb-2ppm, S-0.01%, Zn-2ppm. Overlimit analysis is by OG46 - aqua regia digestion with ICP-AES finish. Gold samples greater than 0.2g/t are re-assayed by screen fire assay using the entire sample to improve accuracy, especially where coarse gold is present.



Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</li> <li>Drilling by triple tube diamond coring generally commences as PQ core until fresh rock is reached. The PQ rods are left as casing then HQ coring is employed. NQ coring is also used (particularly in wedge holes). Reverse circulation percussion (RC) methods used in this program utilised a face sampling 143 millimetre bit. Pre-collars with RC down to between 100 and 350 metres below surface are also employed at Federation.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Chip recoveries are generally monitored visually at the rig by the size of the individual bags. Any low recoveries will be noted by the geologist at the rig. Recoveries for core are generally greater than 95% once in fresh rock.</li> </ul>
	<ul> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Measures taken to maximise recovery include triple tube drilling in soft or broken rock and slower drilling rates in poor ground.</li> </ul>
	<ul> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> <li>The relationship between sample recovery and grade has been assessed for diamond core samples through the use of conditional expectation plots and scatter plots. No obvious relationship exists and sample bias due to the preferential loss or gain of material is not considered to be significant to the resource estimate. The relationship between sample recovery and grade has been assessed for diamond core samples through the use of conditional expectation plots and scatter plots. No obvious relationship exists and sample bias due to the preferential loss or gain of material is not considered to be significant to the resource estimate. The relationship between sample recovery and grade has been assessed for diamond core samples through the use of conditional expectation plots and scatter plots. No obvious relationship exists and sample bias due to the preferential loss or gain of material is not considered to be significant to the resource estimate. The relationship between sample recovery and grade has been assessed for diamond core samples through the use of conditional expectation plots and scatter plots. No obvious relationship exists and sample bias due to the preferential loss or gain of material is not considered to be significant to the resource estimate. The relationship between sample recovery and grade has been assessed for diamond core samples through the use of conditional expectation plots and scatter plots.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> <li>Systematic geological and geotechnical logging is undertaken. Data collected includes: <ul> <li>Nature and extent of lithologies</li> <li>Relationship between lithologies</li> <li>Amount and mode of occurrence of ore minerals</li> <li>Location, extent and nature of structures such as bedding, cleavage, veins, faults etc. (core only)</li> <li>Structural data (alpha &amp; beta) are recorded for orientated core (core only)</li> <li>Geotechnical data such as recovery, RQD, fracture frequency, qualitative IRS, microfractures, veinlets and number of defect sets. For some geotechnical holes the orientation, nature of defects and defect fill are recorded (core only)</li> <li>Bulk density by Archimedes principle at regular intervals (core only)</li> <li>Both qualitative and quantitative data is collected</li> <li>100% of all recovered core is geologically and geotechnically logged, 100% of all recovered chips are geologically logged.</li> <li>The geological and geotechnical logging is considered to have been carried out at a sufficient level of detail to support Mineral Resource estimation</li> </ul> </li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether Quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or</li> <li>Core is sawn with half core submitted for assay. Sampling is consistently on one side of the orientation line so that the same part of the core is sent for assay. PQ core is ¼ sampled.</li> <li>All RC samples were split using a rotary cone or riffle sampler directly off the drilling rig. Two samples were collected for every metre to allow for duplicate samples to be taken at any interval. All sampling was on a dry basis.</li> </ul>



	<ul> <li>dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the insitu material collected, including for instance results for field duplicate/second- half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Samples are dried, crushed and pulverised to 85% passing 75 microns. This is considered to appropriately homogenise the sample to allow subsampling for the various assay techniques.</li> <li>Certified Standard Reference Materials and blanks are inserted at least every 25 samples to assess the accuracy and reproducibility. The results of the standards are to be within ±10% variance, or 2 standard deviations, from known certified result. If greater than 10% variance the standard and up to 10 samples each side are re-assayed. ALS conduct internal check samples every 20 samples for Au and every 20 for base metals. Assay grades are occasionally compared with mineralogy logging estimates. If differences are detected a re-assay can be carried out using the bulk reject or the assay pulp.</li> <li>Systematic duplicate sampling was employed during the Federation RC program. A regular duplicate was taken at predetermine sample intervals (averaging 1:25 samples). Further, samples occurring in mineralised zones are duplicated, increasing the duplicate rate to one sample every 15-20 samples.</li> <li>Sample sizes are considered appropriate for the material being sampled.</li> </ul>
Quality of assay data and laboratory test	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>Standard assay procedures performed by a reputable assay lab (ALS Group) were undertaken. Gold assays are by 30g fire assay with AAS finish, (method Au-AA25). Ag, As, Cu, Fe, Pb, S, Zn are digested in aqua regia then analysed by ICP-AES (method ME-ICP41). Comparison with 4 acid digestion indicate that the technique is considered total for Ag, As, Cu, Pb, S, Zn. Fe may not be totally digested by aqua regia but near total digestion occurs. A small number of samples from Federation were also assayed by Intertek Genalysis in Townsville using comparable methods. Gold samples greater than 0.2g/t were re-assayed by screen fire assay using the entire sample to improve accuracy.</li> <li>No geophysical tools were used in the determination of assay results. All assay results were generated by an independent third-party laboratory as described above.</li> <li>Certified reference material or blanks are inserted at least every 25 samples. Standards are purchased from Certified Reference Material manufacture companies: Ore Research and Exploration, Gannet Holdings Pty Ltd and Geostats Pty Ltd. Standards were purchased in foil lined packets of between 60g and 100g. Different reference materials are used to cover high grade, medium grade and low grade ranges of elements: Au, Ag, Pb, Zn Cu, Fe, S and As. The standard names on the foil packages were erased before going into the pre-numbered sample bag and the standards are submitted to the lab blind.</li> </ul>



Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>All significant drilling intersection are verified by multiple Company personnel.</li> <li>Due to the relatively recent discovery history at Federation, no twinned holes have been used at this stage.</li> <li>Drill hole data including meta data, any gear left in the drill hole, lithological, mineral, survey, sampling and occasionally magnetic susceptibility is collected and entered directly into a Logchief database using drop down codes. When complete the Logchief database XML file is emailed to an external geological database administrator, the data is validated and uploaded into an SQL database.</li> <li>Assay data is provided by ALS via .csv spreadsheets. The data is validated using the results received from the known certified reference material. Using an SQL based query the assay data is merged into the database.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used</li> <li>Quality and adequacy of topographic control.</li> <li>Drill hole collars are initially located using hand held GPS to ±5m. Upon completion collars are located with differential GPS to ±5cm picked up by the mine surveyors.</li> <li>Drill hole collars are initially located using hand held GPS to ±5m. Upon completion collars are located with differential GPS to ±5cm picked up by the mine surveyors.</li> <li>Drill holes are downhole-surveyed from collar to the end of hole by drilling personnel using downhole survey tool (Reflex). Downhole north-seeking gyroscopic survey instruments have also been regularly employed at Federation to improve survey accuracies. Drill holes are surveyed by single shot camera during drilling at intervals ranging between 6-30m. All survey data for every hole is checked and validated by Aurelia Metals personnel before being entered into the database.</li> <li>All coordinates are based on Map Grid Australia zone 55H</li> <li>Topographic control is considered adequate as it is based on a high precision Lidar survey completed over the area in 2019.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>As the prospect discussed represents a relatively new discovery, data spacing is extremely variable. Drill hole spacing at Federation ranges from 25 to 125 metres.</li> <li>The drill spacing is considered appropriate to support the predominantly Inferred classification for the Federation MRE. Additional closer spaced drilling will be required in the future to upgrade the resource to higher classifications.</li> <li>Sample compositing is not applied.</li> </ul>



Orientation of data in relation to geological structure	unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.  • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias,	Drilling is orientated to cross the interpreted, steeply dipping mineralisation trend at moderate to high angles. Holes are drilled from both the footwall and hangingwall of the mineralisation where possible. Estimated true widths for each significant interval are provided in Table 2.  No known bias has been introduced due to drilling orientation.
Sample security		Chain of custody is managed by Aurelia Metals. Samples are placed in tied calico bags with sample numbers that provide no information on the location of the sample. Samples are transported from site to the assay lab by courier or directly delivered by Aurelia Metals personnel.
Audits or reviews	techniques and data	No audit or review of the sampling regime at Federation has been directly completed. However, an audit and review of the sampling regime at Hera, which uses identical sampling procedures, was undertaken by H&S Consultants in November 2015. Recommendations from this review form part of the current sampling practices at Hera and regionally.



Section 2 Reporting of Exploration Results
(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>The Federation prospect is located within Exploration Licence 6162, owned 100% by Hera Resources Pty. Ltd. (a wholly owned subsidiary of Aurelia Metals Limited)</li> <li>At the time of reporting there were no known impediments to operating in these areas</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The area has a 50 year exploration history involving reputable companies such as Cyprus Mines, Buka, ESSO Minerals, CRAE, Pasminco, Triako Resources and CBH Resources. Previous exploration data has been ground-truthed where possible. Historic drill hole collars have been relocated and surveyed. YTC Resources completed a total of four, relatively shallow RC drill holes at the Federation prospect in 2013, prior to the discovery of high grade in 2019.
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>All known mineralisation in the area is epigenetic "Cobar" style. Deposits are generally structurally controlled quartz + sulphide matrix breccias grading to massive sulphide. In a similar fashion to the other Cobar deposits, the Federation prospect occurs to the west of the Rookery Fault, a major regional structure with over 300km strike length. The deposits are near the boundary of the Devonian Lower Amphitheatre Group and the underlying Roset Sandstone. Both units show moderate to strong ductile deformation with tight upright folding coincident with greenschist facies regional metamorphism. A well-developed sub vertical cleavage is present.</li> <li>Mineralisation at Federation occurs in several steeply dipping vein breccia/massive sulphide lenses developed in the centre of a broad NE–SW striking corridor of quartz–sulphide vein stockwork mineralisation. The mineralisation is hosted by fine-grained sedimentary rocks and is best developed within open upright anticline closures in areas of strong rheology contrast imposed by early stratiform alteration.</li> <li>Sulphide mineralisation identified at Federation include sphalerite-galena±chalcopyrite-pyrrhotite-pyrite in veins and breccias.</li> </ul>



Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar o elevation or RL (Reduced Level—elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	All relevant drill hole data is included in the main body of the report.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Exploration results have been reported on a length-weighted basis. No top-cut or grade truncations have been applied to any assay results. Composite intervals are reported using a nominal \$50NSR threshold. Internal dilution of up to 3 metres has been allowed.</li> <li>Higher grade results that occur internal to the composited intervals as described above are included in this report. Higher grade intervals are only highlighted if there are areas within the composite that differ significantly from the overall grades. Reporting of the shorter intercepts allows a more complete understanding of the grade distribution within the mineralised zone.</li> <li>No metal equivalences are quoted in this report.</li> </ul>



Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>While the controls and geometry of mineralisation at Federation are locally structurally complex, the deposit has an overall NNE strike (060°) and a sub-vertical dip.</li> <li>Estimated true widths for each significant interval are provided in Table 3.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	See body of report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All drill results from the recent program are given in this report, or have been reported in full in previous announcements.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	See body of report.



Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Future work is discussed in the body of the text.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	